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ORIGINAL ARTICLES.

ON THE MODERN TREATMENT OF ACUTE GONORRHEA.¹

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A PHYSICIAN, whose scientific attainments I have always held in the greatest respect, once said to me, "I have studied and treated gonorrhea for fifteen years and I feel to-day that I know less about that disease than I thought I did several years ago." It is in that same spirit that I stand before you to-night, and if I seem to you to be too strong an advocate in the use of certain remedies, I wish to say at the outset that I have seen cases which had been treated along these lines which were possessors of as inveterate conditions of urethral disease as any you will find among those treated by more conservative methods. Have some of those cases that must have wandered away from me to go to others been also found to be in such condition? I do not like to think so.

A man presented himself to the writer in the early part of the winter with a gonococcus-bearing discharge of more than two years' standing, the outcome of his first attack. It had been treated in the early stages by one of the ablest specialists and his assistants in a neighboring city. Frequent urethral irrigation with permanganate of potassium was the treatment. In due course of time he had a posterior urethritis followed by epididymitis, a length of time in bed, during which there was brief cessation of discharge. After he was up and about the discharge returned. More permanganate irrigations were used, which he said produced such pain that the strength of the solution had to be reduced to about 1-15,000 before it could be borne. He then visited another specialist, who changed the treatment, and in time there was apparently a complete cessation of discharge and elimination of the gonococci under careful use of protargol in varying strength. The patient then took a trip to Europe, during which time he paid no attention to himself, drank moderately of the wine of the country, but did notice that after indulgence in beer a rather uncomfortable moisture appeared each morning for a few days following. Several months after this he came to New York to settle in business and as time went on he found himself possessed of the constant morning drop and it was then that he came to consult the writer.

This same sequence of events can be duplicated by every method of treatment that has ever been

tried or advocated—whether radical and local measures or conservative and internal medication have been used. I therefore hesitate to lay down any one method of treatment as the ideal one assuring success. There will always be a percentage of failures and those claiming the highest percentage of successes will only be looked upon as colossal distorters of the truth or as observers of an inferior order. The truth is that the treatment of this disorder is as much an art to be cultivated as is the treatment of disease in any other department of medicine or surgery.

You cannot take a set of human animals afflicted with the same disease, put them in at one end of a process of treatment, giving each the same dosage, same interval between each treatment and bring them all out of the other end cured. The time is too short to attempt to enumerate a few of the factors militating against success, such as powers of resistance of the patient, special virulence of the acquired germ, lapses in diet, attendance, etc., on the part of the patient; the physician not always alive to changes in the disease; not always keyed up to a keen sense of the patient's real condition; he may not do his work always with the same degree of skill. Why is the profession, why are we all, constantly trying new remedies which have recently come out, one after the other, with bewildering multiplicity? It is because all who are taking active part in treating this disease are alive to the many conditions to be filled and each new drug has something to recommend it, some improvement embodied in it. Some fill the conditions better than others, some disappoint utterly, theoretically ideal, practically worthless. These new silver salts, their object is to possess the greatest germicidal quality with the least irritating effect.

We are told by one set of observers, "Oh, yes, granted your remedies do this and that; you apparently eliminate the gonococci, but you only change them; they remain latent, but they are there, and your cases you call cured are capable sooner or later of infecting, or they will develop the signs of the sequelæ of gonorrhea." The answer to that is, give us the tests with which to prove the disease still present. As a matter of fact this is true in some instances, but because of this you must not say this is true in all instances. Extremists on the other side say, "Oh, yes, you treat your cases conservatively, but wait a few years till they marry and then see the devastation caused." True again in some instances, but surely not in all. To each I would say take a few lessons from your brother practitioner—he, if he has the experience, has something to teach you.

Every case is a law unto itself. I have seen

¹ Read before the New York Academy of Medicine, March 21, 1901.

cases which have been treated carefully by internal medication, suffer the extreme pains which uncomplicated cases can suffer, quickly take a turn for the better and rapidly recover when treated locally, and I have seen cases treated locally with the greatest care and with the newest remedies and the gonococcus thrive upon the treatment. Therefore, each case has to be studied by itself and treated as indications arise by the light of previous experience, and if during the course of the disease the case comes to a standstill (I am talking of the acute disease) we should look to make some change in treatment. It seems to me that the wider one's experience with different remedies, the quicker one can pick the one fitted for the particular case.

The microscope is our greatest aid in the treatment of gonorrhea. Without it we cannot intelligently treat this disease. The day has gone by when all urethral discharges are treated alike and empirically. Not only is it the chief factor today in making the diagnosis, but also in determining the course of the treatment, and in acute cases it should be used at every visit.

The diagnosis of an ordinary acute gonorrhea is generally easy; in no case should the microscopic examination of the secretion be omitted, no matter how sure one may be of his diagnosis. The gonococcus is a diplococcus. Each half is kidney-shaped with the straight sides facing each other, separated by a minute space so that a single pair has the appearance of the flat surface of a coffee bean. They are arranged in pairs, fours, eights, etc., and appear in groups. One marked peculiarity is their arrangement within the pus cells; they may also be seen outside and between the pus cells and on or within the epithelial cells. They are best seen with an oil immersion lens. An easy method of finding them is by means of the methylene blue stain. A saturated solution of the methylene blue in absolute alcohol should be kept as a stock solution. A few drops of this added to an ounce of distilled water, enough to cause a dark blue color, will serve to make many stainings. A good stain may be obtained by making a thin smear of the secretion on a glass slide, drying it carefully over the alcohol flame, then covering the smear with a few drops of the aqueous blue solution, and then after a half minute washing the slide with a little plain water, dry and place a drop of cedar oil directly on the stained surface and examine under the immersion lens without the use of a cover glass.

For ordinary office work this method is found to be very satisfactory and after one has become familiar with the appearance of the field containing intracellular diplococci a more elaborate method will be found to be of use in special cases only. There are many other stains which may be of use, but this is the simplest and most valuable, at least in acute cases.

The so-called Gram-Roux method of staining is, of course, more accurate and sometimes will be found to be an important help, but where it is used for greater accuracy of diagnosis it is often

necessary also to employ the culture test. This method, however, is of great use, especially in examinations of discharges from chronic gonorrhea or in the later stage of the acute form. These methods depend upon the greater ease with which the gonococcus gives up to its stain as compared with other diplococci which resemble it.

In carrying out the method the most careful attention to detail is necessary. The smear is first stained for two minutes with some stain in aniline water. The aniline water should be comparative fresh and is made by shaking distilled water with aniline oil and then filtering; to the aniline water thus made, enough saturated alcoholic solution of the desired stain, as gentian violet, is added to give it a fairly deep tinge. The surplus of stain is removed with blotting paper, but the slide should not be washed. The Lugol's or Gram's solution is then added to the smear for the same length of time as the gentian violet stain and dried with blotting paper without washing. This solution consists of iodine one part, iodide of potassium two parts, water 300 parts. It is this stain which fixes the aniline stain in the other micro-organisms. Absolute alcohol is then employed to decolorize the smear until to the naked eye it appears colorless. The specimen may then be washed. The counter stain used is generally Bismarck brown prepared as follows: Bismarck brown, 3 parts; water, 70 parts; alcohol, 30 parts. The specimen is stained with this for about three minutes, then washed, dried and examined under the oil immersion lens.

I have observed a few anomalies in cases coming very early and where I made a mistake in diagnosis for that reason. These all occurred in men who had had previous attacks, coming on the first day of their noting an increase or rather starting up of a new discharge. A number of micro-organisms would be found and no appearance of the gonococcus and the case pronounced to be not a gonorrhea and no immediate treatment instituted. On seeing these cases at a later period, one coming on the following day and another at an interval of three or four days, the discharge having increased in amount, it was found to contain a pure culture of gonococci. The knowledge that such a phenomenon may occur should prevent us from arriving at too hasty a conclusion.

Another way in which the finding of the microscope may be misinterpreted is illustrated by a case seen on the first day of the discharge by one physician, who found gonococci present in the discharge and furnished the patient with a solution of protargol to use himself during the day. This caused increase of the discharge and considerable discomfort on the part of the patient, and on his return the following day he was seen by another physician, owing to the ill-temper of the first, who found that in the rather profuse purulent discharge no micro-organisms of any kind were present. Having no knowledge of the previous finding, he at once pronounced the case as not a gonorrhea, but a discharge due to a chemical irritation and advised the discontinuance of

the treatment. The secretion quickly subsided and remained so for ten days, when it reappeared and at the same time was accompanied by symptoms of posterior urethritis, the patient having during that time indulged freely in alcoholics. A knowledge that oftentimes a single injection of protargol will cause a disappearance of the gonococci for twenty-four hours or even longer would have saved the second physician from making this mistake.

There is more than one way, then, to treat gonorrhea successfully in its acute stages, and methods which prove successful in the majority of cases in the hands of one man may prove disastrous when tried by another or attempted by the patient himself. Some general rules must be laid down as guides to follow and I propose to describe those methods which I rely upon for guidance.

In acute gonorrhea we have to deal with what is known as a self-limited disease, but which by reason of bad treatment or neglect or lack of constitutional vigor is capable of lasting indefinitely or setting up pathological lesions which will always leave their impress upon the organism. Though the disease may be self-limited in the sense that its most prominent symptom, a urethral discharge, definitely ceases, yet the etiological factor, the gonococcus, may remain indefinitely, thereby capable of infecting others unless means are taken to eradicate it; while in the absence of irritation the urethra will be immune in a sense to its own gonococci. In this condition it is, however, capable of receiving a fresh infection and undergoing a new typical attack. Under certain conditions, whether by the action of irritants or from overindulgence in either alcohol or coitus, a discharge may be set up in which these gonococci will be found in increasing numbers, but may quickly subside with only hygienic treatment though the contagious element still remains as before.

Some cases even when untreated or only indifferently treated will recover and the gonococcus will die out completely, but in many of these cases urethral lesions may be left behind which will form a focus for the infection of other pathogenic organisms which readily find their way into the anterior urethra.

The earlier the diagnosis of gonorrhea can be made and consequently treatment for its eradication be instituted, the quicker and more safely can the case be brought to a successful termination with less chance of accidental complications or the disease going on to a chronic process. Many physicians make the mistake of waiting in the presence of a slight urethral discharge for further development, instead of making an immediate microscopic examination to establish the diagnosis. Or the patient will try some remedies of his own or of a friend before presenting himself and valuable time is thus lost. Patients with their first attack are unsatisfactory often for another reason; they not only waste valuable time at the start, but often come with the idea that

they are to be cured quickly, and at the first cessation of the discharge, stop coming, with the result that a fresh outbreak, indicating an infection deeper in the canal, springs up, which is far more difficult to eradicate than it would have been had they not ceased to attend, thus rendering their first visits absolutely useless.

All who have had any experience in the treatment of gonorrhea recognize that there is a vast difference between a case with its first attack and one which has had multiple attacks in their reaction under treatment. Nevertheless, in the treatment about to be described, when used at the earliest possible moment, there seems to be no difference in the reaction to treatment, unless it be that the average is rather better in those patients with their first attack. Though there may be difference of opinion as to the proper management of a case which has existed for several days, still in the light of past experience there is absolutely no doubt in my mind as to the desirability of instituting radical measures at once if the case has come early in the disease, and hours make a vast deal of difference at this time.

Hot irrigations have been found to be soothing to the inflamed urethral canal, but plain water is also irritating, therefore I have continued the use of permanganate, but in weaker solution than formerly. Undoubtedly other solutions may be found as good—perhaps a saline solution as given in a recent issue of the *Medical Record* in an excellent article by Dr. Woodruff. The heat undoubtedly has an effect on the gonococci in the deeper portion of the tissues. Irrigations have to be copious and frequent, but must be used by the physician himself. Beginning at 105° to 110° F. the heat can readily be carried up higher to 120° F. The test is the effect on the patients; it should be non-irritating.

Next, the germicide; in acute disease protargol in varying strength, from $\frac{1}{2}$ per cent. to 2 per cent., held for ten minutes. As a beginning injection I now use a full urethral syringe, half fill it with a 2-per-cent. cocaine solution, and fill the remainder with 2-per-cent. protargol. At each successive visit the cocaine is diminished and protargol increased, until the full strength 2-per-cent. protargol is used, if it can be borne by the patient without undue irritation; but here again the strength is made according to its effect on the patient and the cocaine dropped entirely by the third or fourth visit.

The anterior urethra only is treated, as long as the anterior urethra only is affected. In cases seen early I try to have the treatment given for three or four days if necessary, twice a day. Sometimes only the first day is it necessary to come twice; sometimes if the patient can stand it and is willing to come twice a day for a longer period than four days, there will be benefit; the average is three to four days, then the rest of the first week's treatment is once a day.

During the second week successful cases come every other day; during the third week twice (there being no treatment between), the fourth

week once, and at the end of the fifth week, if there has been no return of discharge or no gonococci can be found, the patient is given the beer test. He is to drink beer freely—sometimes I make them drink beer every day for a week. Then gonococci are sought for with the microscope, and I have had cases where cultures also were made.

Then—and even this I think important—the patient returns in four to six weeks for a final examination.

I have seen cases in which the gonococcus has disappeared absolutely after the first treatment and not been encountered again; others take a longer time before they disappear from the discharge, and some in which either after disappearing for a time they reappear or do not disappear at all. Still the patient has at no time suffered from the symptoms of the disease; he feels in every way as well as if he did not have the trouble. These cases have some infected follicles within the urethra, usually near the meatus. In other words the impression that I get from this course of treatment is that the disease is throttled at the outset if seen within twenty-four hours; if later, but still before acute symptoms come on, it is checked and kept confined to that portion of the canal already affected, from which it can be only more slowly dislodged.

If the case presents itself later than the third day the disease is practically in full blast, yet even then patients do better with this treatment than any other with which I am acquainted. These patients are frequently made comfortable during the remainder of the attack. Sometimes during treatment certain modifications are necessary. The patient may not be able to come so often, or when the time comes to lengthen the interval of treatment gonococci may return. The patient may then be instructed how to treat himself and be furnished with a $\frac{1}{2}$ - to 1-per-cent. solution of protargol to be used once or twice a day at home.

If the disease has made considerable progress before presenting, there is much room for difference of opinion as to whether we shall begin local treatment at once or wait for the decline. Personally I prefer always, if possible, to begin local treatment at no matter what the stage, for the course of the disease can be considerably modified by this treatment and it can be used even when complications are present, though one should know what the limitations are before using it. Of course, we know that the gonococci have penetrated the mucous membrane and only those on the surface are affected, yet all those on the surface of the urethra can be annihilated and those deeper in are removed as they are brought to the surface by the exudation of pus.

The secret of the good to be obtained is due to complete mastery of details and the utmost gentleness and patient deliberateness of technic. Of course, cases will be found where these remedies seem absolutely impotent and we have to look for assistance from other remedies lo-

cally or internally. The diet must be watched carefully and the general health of the patient looked after. For instance, the balsams, if given understandingly, will be of use. I long ago gave up copaiba and cubebs; in selected cases sandal oil, obtained from first-class manufacturers, is of assistance. It should be remembered that this is of assistance only and not curative in any sense of the word. As an adjuvant in selected cases it is of great use, and it should never be pushed to the physiological limit. Ten-minim doses of sandal oil, three times daily, yield good results, but it should never be used indefinitely. If it does not give prompt action it should be discontinued. When the posterior urethra has become apparently infected a capsule containing one grain of methylene blue and four grains of boric acid has been found of use. The objection to them is the coloring of the urine, which can be kept off the underwear only with the greatest precaution. Salol and oil of gaultheria may also be mentioned. As soon as the posterior urethra has become invaded it is the practice of the writer to treat that locally also. To be of use treatment should be at least once daily, and the time for instituting treatment depends on the condition of the anterior urethra.

Much has been written, however, against irrigation into the bladder from the meatus without the intervention of the catheter. When this can be made without causing discomfort to the patient it is an excellent method, but where the slightest force is used it may be operative of a worse condition than the disease itself. This is due to the utter misconception of the proper manner of performing irrigation of the posterior urethra and bladder without a catheter. Many writers speak of forcing the compressor muscle by hydrostatic pressure. Of course this can be done, but with what an amount of discomfort and injury to the patient. To do this properly we should have the full coöperation of the patient. After the anterior urethra has been thoroughly irrigated the patient is told to urinate just as the fluid is entering the canal. He will thus relax the compressor muscle and while he is doing this the irrigating fluid is allowed to flow along the urethra and will run into the bladder. As soon as the patient has caught the trick the bladder can then be readily flushed from the meatus and urinated out. If the patient does not relax properly this practice should be omitted. The best way to learn this method is to practice upon chronic cases.

Of greater importance is the use of protargol in the posterior urethra. A new soft-rubber catheter, lubricated with glycerin or other soluble lubricant, is very gently passed down to the compressor muscle and filled with protargol to expel the air. No. 12 French is the best size and should have a wide mouth for receiving the point of the syringe. The catheter is then slipped very gently past the compressor muscle into the posterior urethra and from one-half to one ounce of protargol solution (gradually increasing to 2 per

cent.) is slowly instilled into the bladder, being shortly after this urinated out. If the fluid returns about as it was instilled, it shows that the bladder empties itself. Some cases with posterior urethritis, however, do not completely empty the bladder. When this is found to be the case, before instilling the protargol the catheter is to be passed into the bladder with the utmost gentleness and the bladder emptied. The catheter may then be withdrawn from the posterior urethra; the protargol in it will be urinated out as before.

It is especially important that after the necessity for treatment has passed and the patient has gone through the tests that he be instructed to call for examination within six weeks after all treatment has ceased.

CHRONIC GONORRHEA.

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THE field of chronic gonorrhea covers such a vast area that, with the time allotted in a discussion of this nature, it is obviously impossible to consider the subject in all its minute details, or to describe fully the many plans of treatment which have been evolved from time to time. I shall therefore only attempt to study briefly the principles which guide us, and to explain the application of them as far as possible. I must however beg indulgence if, in the following observations, I have not strictly confined myself to that portion of the general subject assigned me; but in order to consider intelligently the treatment, it is essential that we understand the origin, pathology and diagnosis of the disease, at least to a limited extent.

To give a strict definition of chronic gonorrhea would lead us over nearly the entire field of its pathology as well as symptoms; it might perhaps be described as one in which as a consequence of previous gonorrhreal infection, there exists a secretion of the urethral mucous membrane and adnexa due to changes in the tissues, which secretion, containing gonococci, is composed of mucus, pus and epithelial cells manifesting itself (1) either by a drop of watery or muco-purulent fluid at the meatus some hours after urination, or upon pressure, the so-called "morning drop," which may be increased in amount and be present at any and all times; (2) by glueing of the lips of the meatus in case there is not sufficient discharge to form a drop; or, (3) simply by the presence of shreds in the urine, the so-called "clap-threads."

Although this is true in the large majority of cases, Hein¹ has shown that the changes in the urethra are present without the evidences just mentioned, but where we find gonococci in the urine, nevertheless.

Not only this, but we know that gonococci may remain dormant in the prostate for months without any outward evidence, and subsequently can, as Frank² has shown, cause infection. The etiology must be sought for in the damage caused to the urethral mucous membrane and that of the adnexa by the acute process. The migration of gonococci into the tissues causes but a temporary diffuse inflammation, though as a consequence caused either by the gonococci (or their toxins, according to Friedländer, Christmas, and Wasserman) we subsequently find circumscribed changes in the mucous membrane which give us the picture of chronic gonorrhea. This is especially the case where the powers of resistance have been weakened, even when these cases have been "apparently" healed.

Either through indolence of the patient or on account of a too superfluous examination by the physician, or both, acute gonorrhea is often regarded as cured. If at this period excesses are indulged in, especially alcoholism or coitus, or should the patient suffer from repeated emissions, a return of the trouble is very probable; and the oftener these relapses the less intense but the more persistent they become, with finally a condition of chronic clap.

Frequent fresh infections whose course also becomes modified the oftener they occur, result in the same condition. Finger³ charges that a chronic condition occurs especially when the acute process covers a large area of surface, i.e., when there is both anterior and posterior infection, on account of the almost universal treatment with injections, without reference to the extent of the process. When the fluid from the ordinary hand injection stopped by the cut-off muscle does not reach the inflammatory process in the posterior urethra, it is thus not treated, and though it becomes less intense does not disappear, but spreads into the prostate by way of the ducts.

In this connection it is important to consider the frequency with which the prostate is involved, and thus forms a constant focus for a chronic gonorrhea. That gonorrhreal prostatitis is frequent is now admitted by most observers, and doubtless occurs much earlier than is usually thought to be the case. Frank,⁴ in a paper read before the Genito-Urinary Section of the last International Medical Congress, stated that it is found involved in many cases as early as eight days after the first symptoms of gonorrhea, in spite of the fact that there may be no subjective symptoms, and in spite of the absolute clearness of the second portion of urine.

The pathological changes which have been demonstrated so well by Kollmann and Finger, consist of an "inflammatory connective tissue formation or hyperplasia," characterized (1) by round small-cell infiltration usually localized about the glands and lacunæ, representing when advanced the granulations seen in the endoscope; and (2) by an atrophy and shrinking of the new connective tissue with the formation of indura-

¹ Read before the New York Academy of Medicine, March 21, 1901.

tions. In other words, the two stages of a cirrhotic formation.

This process can be either superficial, a non-stricture forming scar; or deep, involving the cavernous tissues, a true cirrhotic formation or stricture. This is especially the case anteriorly; while posteriorly the same process extending in the submucous tissue, causes swelling of the *caput gallinaginis* and chronic prostatitis. Together with these changes we have a proliferation of the epithelium and transformation of the cylindrical into flat, both upon the surface and in the glands, with eventual obliteration and destruction of the latter (Finger).

These conditions can at any time be complicated, either by a relapse into the subacute form, or by a fresh infection.

As for the Diagnosis.—There are several important points to be cleared up before treatment can be commenced, (1) as to the character of the discharge; (2) its origin; and (3) the pathological conditions which cause it.

1. *Is the Discharge "Septic"?*—Do we find upon microscopical examination pus cells and gonococci? Or is it in the stage of "secondary infection" with other bacteria coming either from without or from the rectum? Or is it so-called "aseptic," of an epithelial nature, with perhaps a few leucocytes and fibrin, for as we have just seen masses of flat epithelium are found as a part of the chronic inflammation, and these together with the mucus from the urethral glands—especially after morning erections, form the "morning drop" or "threads."

2. *The Origin of the Discharge.*—To determine this the so-called Thompson "two glass test" is not sufficient as a rule, as a small amount of secretion may remain in the posterior urethra, and, not flowing into the bladder, does not contaminate the whole amount passed; but thus remaining would be washed out with the first gush of urine, as well as that in the anterior urethra. Hence, it is necessary to resort to the "irrigation test," the washing out of the anterior urethra by catheter before micturition, when if threads are still present, we know that they come from the posterior part. Still further, if the prostatic glands are inflamed, pus and comma-like plugs are often pressed out and appear with, and in, the last few drops of urine, or just after. This can be collected in another glass, the so-called "three glass test" which can be made with or without washing out the anterior urethra.

3. *The Pathological Changes Which Cause the Discharge, Are They Superficial or Deep?*—This can usually be demonstrated by the Otis urethrometer for the anterior urethra; the deeper form very early affecting the dilatability of the urethral walls, while this is not the case if the inflammation is superficial; but the findings of the urethrometer should always be confirmed by the endoscope. Deep chronic posterior disease is often characterized by those symptoms which we call "sexual neurasthenia," i.e., the spermatorrhea of micturition and defecation, prostator-

rhea if the prostatic ducts are involved, pain on ejaculation if the ejaculatory ducts are inflamed, precipitate ejaculations, poor erections and frequent emissions, together with a train of nervous phenomena and general depression. Examination of the prostate by rectum will reveal gross changes, and microscopical examination, with cultures of the excretion massaged, will confirm the diagnosis if successful, but will not disprove it if unsuccessful, as in old chronic cases gonococci are often difficult to demonstrate. It should not be overlooked, however, that different portions of the canal may be diseased at the same time, each process in a different stage, and demanding different forms of treatment.

Treatment.

1. *General.*—To lay down a hard and fast rule for the hygienic management of chronic gonorrhœa would be impossible. So much depends upon the individual case, and the stage of his disease, that each to a certain extent, must be treated upon its own merits. In general we might say that it is practically that of the acute disease, except that greater freedom may be permitted as regards diet and exercise. Sexual excitement especially should be forbidden, excepting, perhaps, in certain very chronic cases in moderation, in order to allay and avoid congestion which is so detrimental to the furtherance of a cure.

The extremes may be pictured on the one hand in the so-called "sub-acute condition" with a muco-purulent discharge containing gonococci, where it is obvious that a relaxation of the rules necessary in the acute trouble—excepting in the most inflammatory stage—would be contra-indicated; and on the other hand in anemic, poorly-nourished and debilitated individuals, either originally so or as a result of a long course of local and internal treatment, with mental worry and consequent malnutrition, with a flabby or so-called "leaky condition" of the mucous membrane, where tonics, alcohol in moderation, exercise—excepting the horse and bicycle—and general constitutional stimulants will, in some cases be more effectual than any amount of local treatment. Between these two, each case must be judged upon its individual merits; the personal equation and the patient's experience often being of considerable assistance.

2. *Internal Treatment.*—The rules which guide us here are also very similar in principle to those of the acute stage: alkalies and diluents in case of scalding, if re-infection is present; oleoresins when this has subsided; and later, antisepsics, as salol and urotropin.

3. *Local Treatment.*—General rules to be observed in all cases are: (1) Care and conservatism in all procedures; (2) avoidance of over-instrumentation and injuries to the mucous membrane; (3) sufficient rest after passing through one system of treatment before beginning another in case the other is necessary; (4) regular and systematic use of the microscope in the con-

trol of the treatment—this is most essential; (5) surgical cleanliness, and sterilization of all instruments.

Local Procedures.—These should be directed against (1) the gonococci; (2) other bacteria in case secondary infection is present; and, (3) the anatomical lesions, the results of the gonococci and their toxins with the restoration of the tissues to their normal condition as far as possible.

Before considering the purely chronic disease with localized lesions in contradistinction to the acute, where they are diffuse, it is first necessary to study that condition known as "subacute" directly from which the chronic is developed, and by which it can at any time be complicated. "This, a still more or less diffuse process, but with the localities which are to be the seat of chronic trouble in the first stage of inflammatory hyperplasia, is characterized by a still considerable number of pus cells, or many and heavy shreds in a cloudy urine" (Finger).

The points in particular where the tendency to localize is most marked are the "fossa navicularis" and the "bulb," especially the latter where pus is more prone to collect. Should there be any doubt as to the significance or morphology of any diplococci which may be found, the "Gram test" or method of staining is our best means of a differential diagnosis.

The best remedy at our disposal at the present day for destruction of the gonococci is protargol. The ordinary urethral syringe, of good service in some conditions, is not sufficient for a thorough washing, as with it a complete unfolding of the mucous membrane is scarcely possible, and much to be preferred is the system of irrigation with the fountain syringe, one point in the technic of which should be mentioned, i.e., where the anterior urethra alone is being washed out in order that the folds may be obliterated, it is necessary not only to draw out the glans from the body, but the urethra should be thoroughly filled by alternately relaxing and pressing the beak of the instrument against the meatus.

If, however, the posterior urethra is also involved, the irrigation must reach the bladder, when it is better to avoid spasm of the cut-off muscle by the use of cocaine, 10 to 15 grams of a 1-150 solution held in the anterior urethra for four or five minutes, generally being sufficient to accomplish this purpose, when the irrigation can be made either with a fountain syringe, or with what I usually prefer, the large urethral syringe holding 150 grams, known as the "Ultzmann syringe," but now modified (by Janet, Frank and others) so that it is sterilizable, and to which blunt porcelain tips are fitted in order not to injure the mucous membrane.

The discharge of pus in the urine in considerable quantity, together with scalding, indicates that a considerable area of mucous membrane may be inflamed or irritable, and that urethral instrumentation should be avoided if possible—a rule in all stages of gonorrhea.

The strength of protargol employed is from $\frac{1}{2}$ to $\frac{1}{2}$ per cent, for the anterior urethra, and from $\frac{1}{2}$ to 1 per cent, for the posterior; the amount for the anterior, 500 to 1,000 grams; for the posterior, 200 to 500 grams. The injections are made daily, but I have found that they are most effectual when combined with hand injections of weak bichloride of mercury, from 1-30,000 to 1-15,000 made by the patient himself.

It is most important, however, that the capacity of a hand syringe be sufficient to thoroughly fill the anterior urethra; the small variety ordinarily employed being frequently useless, holding usually but 4 to 8 grams (1-2 drams), whereas they should hold 10 to 15 grams (3-4 drams). In prolonged cases with the lessening of the pus in the discharge, diminish the strength of the protargol, it previously perhaps having been carried to $\frac{1}{2}$ per cent, depending greatly upon the sensitiveness of the patient. Likewise with the frequency, with the lessening of the pus, they are given less frequently, every second, third or fourth day, and, finally, once a week; in this manner in a large number of cases, not only the discharge but the filaments in the urine disappear. The diminishing of the strength of the solutions and the lessening of the frequency of administration, are most important, as it must be remembered that a so-called "chemical catarrh," the result of injections, may be kept up where no gonococci or other bacteria are to be found.

Should the discharge or shreds which remain have been freed of gonococci after repeated examination, we are in what Janet⁸ terms the "aseptic stage"; but should as is so frequently the case, other bacteria—staphylococci usually—be present, then we have the so-called "secondary infection."

When secondary infection is present I have found the best results attained from bichloride of mercury in the strengths just mentioned, or even slightly stronger, used as an irrigation by either of the two methods; but as with the protargol in the previous stage, after increasing the strength it should again be diminished as should also the frequency of the washings or irrigations. When other bacteria are no longer to be found, or have not been present, weak solutions of astringents, such as nitrate of silver, sulphate of zinc, or acetate of lead, may be used with the hand syringe; or weak bichloride as a douche. At this stage, a very excellent method is the washing out with the so-called "Ultzmann solution" either by the methods just mentioned; or, by injecting it into the bladder with a soft rubber catheter, allowing the patient to void the fluid afterward. This solution consists of one part each of zinc sulphate, alum, and carbolic acid, to 1,000 parts of water.

Should discharge or shreds still persist after a fair trial of the treatment thus outlined, a period of rest is indicated before instituting more localized procedures for the reason just mentioned.

As to truly *chronic cases*, where the disease is distinctly localized, the plan of treatment to be developed should be guided by (1) the anatomical character—whether we have a superficial inflammation, or an infiltration of the deeper tissues—and (2) the localization of the process—whether in the anterior, or posterior urethra, or both.

The superficial circumscribed and succulent patches of mucous membrane can be treated by the application of concentrated astringents or caustics, localized as much as possible in order to bring about re-absorption. These can be carried to the diseased portions either (1) by the various so-called "capillary syringes," or by means of brushes with especially adapted instruments; (2) in the form of ointments and less solid fats by the instruments of Lallemand and Tomassoli; (3) with the aid of the endoscope by applicators with cotton.

The solutions employed in the various capillary syringes (either that of Guion,⁹ the original Ultzmann instrument, Friedländer's combination of the two,⁷ Oberländer's removable silver tipped instrument,⁸ Bang's⁹ syringe, which I prefer, with that of Guion; or the soft catheter employed by Taylor¹⁰) are usually nitrate of silver from $\frac{1}{2}$ to 5 per cent., or sulphate of copper of about the same strength; the amount, from 2 to 10 minims; the frequency not oftener than three times a week, usually twice and sometimes but once, or less frequent, beginning with the weaker solutions, being guided by the sensations of the patient and the results of treatment; and never giving a second injection until the symptoms of irritation from the preceding have subsided. After a few weeks allow the patient to rest.

The employment of ointments or fats as vehicles for medication, although by some considered less sure and more uncertain as to results, is recommended by its advocates most highly. For this purpose nitrate of silver can be used in the same strength as in the watery solutions made up with lanoline and sufficient olive oil to render it fluid at ordinary temperatures.

The use of the endoscope has occupied a very prominent position in modern therapeutics of the urethra; but it has its limitations and should not be used indiscriminately.

As a general rule we might say that being a procedure the action of which is local, its application should be limited to localized lesions—those macroscopically visible. I shall not enter into advantages and disadvantages of the various instruments, as with the most of the modern ones—especially those devised by our American colleagues—when in the hands of competent men, good work can be done, as also with the speculum of Tilden Brown which has proved itself most useful. As said, the field of usefulness of the endoscope is a limited one, but not so limited as some of its opponents would have us believe, though considerable experience and practice are necessary to be able to recognize the pathological from normal tissues. I can do no better than quote Klotz¹¹ as to its use when he says: "It is

principally indicated in those superficial inflammations in which circumscribed patches of the mucous membrane, wherever located, have undergone certain changes which cannot be effected any more by the usual injection of astringents or parasiticides, because those remedies are powerless in the solutions which may be syringed into the urethra without injury to the healthy portions. By using the brush or applicator and cotton we may apply much stronger solutions or powder or even caustics to the diseased spots and to them alone."

The remedies which may be used are limited only by the Pharmacopœia, and it is difficult to explain why one will act well in one case and not in the other. With involvement of Morgagni's lacunæ and the glands of Littré, when the pits are depressed below the surface, the endoscope or speculum is invaluable, as lavage and injections will not reach them, and they may form foci of repeated infections. These may be treated with solutions with Kollmann's urethral syringe, with the knife, cautery or electrolysis.

Later on polypi and condylomatous growths—which are rather rare but sometimes the cause of a chronic discharge, or perhaps hemorrhage, are removed with the cautery or instruments especially devised, as that of Denos.¹²

The endoscope, however, as with other methods is not infallible. Generally speaking it should not be used until other means have failed us, unless required by special indication.

When the pathological changes have gone deeper than the surface, when examination shows the presence of an infiltration or perhaps already the formation of a cicatricial tissue, it is very evident that it is a thankless task to reach it by means of astringents applied superficially; for although we may get temporary results we do not get "at the bottom," so to speak, and slight causes may bring on a recurrence of the symptoms.

The principle to be employed in these conditions is "dilatation combined with irrigation with astringents or parasiticides." In its simplest form this can be carried out with a steel sound followed by injections or the use of the fountain syringe, remembering that when treating the anterior urethra alone, it is unnecessary to go into the prostatic urethra. In recent years this dilatation with more complicated apparatus has been done, first by Oberländer¹³ with his two-bladed instrument, and more recently with the Kollmann¹⁴ four-bladed dilator, or Valentine's¹⁵ recent modification of the latter. These are to be preferred to the sound in many cases, because the meatus is too small to pass a sufficiently large sound to exert the amount of dilation necessary; and because when dilating a special region, as the bulb, to some considerable extent, it would be needless and harmful to exert the same pressure over a too large area. Kollmann's irrigating dilator, where both steps can be done at once, will be found useful in many cases. The dilators are made in different shapes according to the anterior or posterior urethra, or both; and when in

use are provided with a rubber covering (excepting the irrigating instrument) to prevent catching the mucous membrane while being closed. The first stages, however, can be accomplished more easily and with less danger with sounds, these being increased in size very gradually up to No. 30 or thereabouts, cutting the meatus if necessary beforehand, and after each sitting washing out the urethra with astringents as just mentioned. Dilatation with the dilator proper, must be done *gently, gradually and without force*, to avoid injuries and tears in the mucous membrane. It should not be applied oftener than once a week, Frank's rule where both anterior and posterior urethrae are at fault, to dilate them alternately every three days, being a good one. Contra-indicating symptoms are pain, hemorrhage and increased discharge. The length of the sittings is from five to twenty minutes *increasing but one number of the scale each time*.

As with the sounds, astringents are again used immediately following (excepting with the irrigating instrument) either weak, by irrigation, or concentrated, with the assistance of the endoscope, as recommended by Klotz; or, if posteriorly, with a capillary syringe. Pain can be greatly controlled with cocaine before operation. The astringents best employed are bichloride of mercury, silver, or the Ultzmann solution, preferably the former, to prevent secondary infection; and this should also be given the patient for use as hand injections between the sittings. A sudden increase of discharge containing gonococci indicates that we have probably ruptured an encapsulated gland containing gonorrhreal pus, or perhaps a re-growth even from a single coccus causing a re-infection, the first, practically an advantage to have gotten rid of another focus.

Never use the dilator as long as gonococci are present, excepting, as Bierhoff¹⁸ says, "in those cases in which endoscopy has shown that the glands and crypts and tissues immediately surrounding them are the seat of the trouble, and then only with the irrigating dilator."

Nor should it be used when other bacilli are present. In superficial chronic posterior urethritis, after the gonococci have been gotten rid of, it is useful in removing the infiltrate; but, as Bierhoff again states, "as in over 90 per cent. of chronic disease of this region the focus of disease is in the prostate, dilation is not only useless but positively harmful." Valentine's²² statement "that all cases of chronic gonorrhea are not cured by it, but that a large number being due to infiltration of the crypts, glands and surrounding tissues, either yield or are greatly benefited by it" I believe true.

Chronic inflammation of the posterior urethra on account of the anatomical character of that region, unfortunately does not, as a rule, remain superficial; the mucous membrane instead of being richly supplied with glands and lacunæ, is in close anatomical connection with the prostate, and it is but a short distance by way of the ducts to the glandular structure itself. Frank¹⁷ states,

that in 631 cases of gonorrhreal urethritis, the posterior urethra was involved 210 times, or 32½ per cent.—nearly one-third—though a number of these had previously suffered from posterior disease. In all the 210 cases the prostate was diseased, i.e., 100 per cent.; and in the 210 gonococci were found 179 times, other bacteria 20 times, and aseptic secretion with leucocytes 11 times.

Personally, I am not prepared to offer any statistics that would tend either to confirm or deny these figures, but am convinced by recent observation that involvement of the prostate is of very frequent occurrence, and in the majority of which cases gonococci were demonstrated in the expressed fluid.

As irrigations and instillations will not reach the gonococci when in the prostate, it is evident that we must resort to other means, and this is primarily accomplished by prostatic massage followed by washing out of the bladder and posterior urethra. More recently faradism has been added to the massage, instruments for which have been devised by Högge,¹⁹ Janet,²⁰ Frank,²⁰ Guiteras,²¹ and Freudenberg,²² the latter being an arrangement by which the electricity is passed through the finger of the operator as one pole, which at the same time accomplishes the massage. If the mouths of the glands and ducts have become constricted by surrounding inflammation, and plugged with inflammatory products causing a cystic condition of the glands themselves, the results of treatment will be less rapid. Until we have, however, after repeated trials been unable to demonstrate the presence of gonococci in the expressed secretion, we are not justified in concluding that this part of the genito-urinary apparatus can be eliminated. Care and conservatism in performing the massage, with sufficient intervals between the sittings, are to be borne in mind. Acute inflammations and abscess are naturally contra-indications to this form of treatment.

That a large number of chronic gonorrhées, speaking generally, remain uncured, is undoubtedly; some of these may be explained by the indolence or the discouragement of the patient, others by want of care or understanding on the part of the physician, others by reason of constant re-infection, either from the wife or mistress, and still others from no tangible cause, all gonococci having "apparently" been eliminated.

I have not been able to consider every hypothetical case of this extremely important disease, the principles governing the treatment of which, if more generally comprehended by the profession, would, I believe, do much toward the limitation of infection in the opposite sex, and the consequent long train of gynecological disturbances and oftentimes sterility.

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ON GONORRHEAL CONJUNCTIVITIS.¹

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THE treatment of gonorrhea of the conjunctiva has followed the swing of the pendulum like the treatment of gonorrhea of the urethra. A generation ago strong solutions of nitrate of silver were applied to the conjunctiva from the very incipiency of the disease. Then a reaction took place in many quarters and the disease in the acute stage was treated exclusively with cold applications and irrigation with mild antiseptic solutions. Recently there has been a general return to the use of the astringent and coccus-destroying silver preparations, but in the place of the caustic and irritating nitrate, which is so painful when applied to the conjunctiva, blander preparations, such as protargol and argentamin, are now very generally used.

The course of untreated gonorrhreal conjunctivitis and the complications to which it often leads may be described in a few words. From one to four days after infection the first signs manifest themselves in a swelling of the lids and, in adults, a thin, watery discharge. The lids then continue to swell until they may become brawny, when eversion is impossible. The conjunctiva of the eyeball, too, becomes edematous, flakes of mucus appear in the discharge, and the patient experiences considerable discomfort. A day or two later, whether in the new-born or the adult, a thick creamy purulent discharge fills the conjunctival sac, floods the cornea, and pours out through the aperture of the lids. At this early stage the nutrition of the cornea is interfered with and it sometimes sloughs, breaking down, it may be, in the course of a few hours, as it does sometimes in the keratomalacia of poorly-nourished infants suffering from fatal diarrhea. After the purulent discharge is established the

swelling and tension of the lids diminish, but the conjunctiva remains swollen, and velvety from a hypertrophy of its papillæ. The parenchyma of the cornea may now become diffusely hazy or superficial ulcers may appear which rapidly extend deep and often lead to perforation of the cornea with all its disastrous consequences. The purulent discharge gradually decreases and in the course of several weeks may cease, but a chronic papillary hypertrophy of the conjunctiva still persists.

The purposes of treatment are threefold, the checking of a contagious discharge, the prevention of complications on the part of the cornea, and the avoidance of infection of the second eye if this is still healthy. The ideal treatment, if it can be carried out, is as follows: When a patient with suspected gonorrhreal conjunctivitis is first seen, the discharge should be examined microscopically. Frequently a man with a urethral discharge acquires an innocent conjunctivitis caused by the Weeks bacillus or the pneumococcus, and if the benign nature of such an inflammation is not determined at the outset much needless anxiety may be suffered. At the very beginning of the disease a single application of nitrate of silver, two per cent., or of protargol, forty per cent., may modify favorably its subsequent course. The chief indication, however, in the early stages is cold. The patient is kept in bed, and patches of lint, absorbent cotton, or folded linen that have lain on a lump of ice are applied to the closed lids, and changed every minute or two, day and night continuously. This is most essential during the stage of extreme swelling of the lids. Besides this, the conjunctival sac is irrigated every few minutes, or as often as is necessary to keep the eye free from secretion, with a warm saturated solution of boric acid or a 1-2000 solution of permanganate of potassium. These solutions are dripped into the eye from a pledget of cotton without the use of any instruments that might abrade the cornea. In infants, too much cold may injure the cornea and hence the iced applications are changed less frequently or used less continuously. The cornea is inspected at least once a day and at the first sign of haziness the cold applications are decreased or even warm ones may be substituted and atropine is instilled.

When one eye only is affected the other is protected from infection by a transparent shield attached with adhesive plaster or by an ordinary dressing which is rendered impenetrable to pus by gumming down its edges with collodion.

If the attending physician elects to use nitrate of silver this is brushed over the conjunctiva of the everted lids, in a one- or two-per-cent. solution, once or at the most twice daily as soon as the swelling has diminished sufficiently to allow the lids to be everted. This is continued until the discharge is checked, when a weaker solution may be used for the persisting papillary hypertrophy.

The manner of using protargol is not yet conventional and uniform. It may be employed,

¹ Read before the New York Academy of Medicine, March 21, 1901.

however, from the beginning of the disease without causing the irritation and pain that follow the use of silver. Some ophthalmologists apply a twenty- to forty-per-cent. solution to the everted lids once or twice in the twenty-four hours. Others apply a five-per-cent. solution once daily and have a three-per-cent. solution dropped into the eye every four hours, and still others have a five-per-cent. solution dropped into the eye three times daily. Some who have used weak solutions only are so skeptical as to declare that, while protargol is unirritating, it is also inefficacious, but recent comparative statistics seem to show that if used in sufficient strength protargol cures the disease in a shorter time than silver and with less discomfort.

When ulcers of the cornea develop and appear to be infected they are touched with tincture of iodine, carbolic acid, or the actual cautery; and perforation of the cornea with prolapse of the iris is treated as are cases of perforating ulcer from other causes.

Obstetricians and midwives, unfortunately, do not always take ophthalmia neonatorum seriously. Furthermore, the Credé method of dropping a two-per-cent. solution of nitrate of silver into the eyes of the new-born is not always a preventive. Many of these little patients are brought to us with the cornea already affected, and such eyes frequently are lost. Only a few days ago, for example, a mother who had not been warned of the gravity of the disease brought her neglected infant two weeks old to the Vanderbilt Clinic with the cornea of each eye wholly sloughed away, which, of course, means permanent blindness that might have been prevented. And such cases are not uncommon.

Unfortunately, too, many patients with gonorrhreal conjunctivitis cannot be treated properly because of the lack, long deprecated, of a special public hospital in New York for contagious diseases of the eye. A patient with gonorrhreal conjunctivitis requires nursing night and day; he should not be kept in a ward with ordinary patients, and his nurse should not be allowed to attend other patients. Therefore, most hospitals admit these patients under protest and with restrictions, if at all, and thus many of the patients who apply at the dispensary must be treated unsatisfactorily as out-patients. Patients may be sent, it is true, to the City Hospital on Blackwell's Island if they are willing to go there, and a special ward for contagious diseases is in operation at the Manhattan Eye and Ear Hospital, while a new detached pavilion for contagious diseases of the eye, which is a model of its kind, has just been opened at the New York Eye and Ear Infirmary. Still, at present, it is clear that conditions are not as we would wish them, and we feel sure that if patients with gonorrhreal conjunctivitis were always sent to us before corneal complications had arisen, and if there were always convenient hospital facilities for the care of serious cases and such as cannot be treated properly at home, the number of the dependent blind

would be greatly reduced, and the enormous expense of supporting them throughout their lives in an asylum would be in no small degree curtailed.

The establishment of a public hospital in New York for the treatment of contagious diseases of the eye is most desirable as a purely economic measure, to say nothing of its humanitarian features. But, economically, it is even more desirable that all who attend women in labor should realize the importance of preventing gonorrhreal conjunctivitis by disinfecting the eyes of the new-born, and when, notwithstanding, exceptional cases do develop, of having them treated with intelligence and without delay.

TREATMENT OF GONORRHEAL STRICTURE OF THE URETHRA.¹

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THE treatment of gonorrhreal stricture varies greatly in different cases, depending both upon its situation in the canal, and whether it be soft and yielding, or dense and fibrous in character; therefore, before adopting any plan of treatment, the surgeon must first ascertain by careful urethral exploration, the location, consistence, extent and caliber of the contraction and also, from a urinary examination, the condition of the kidneys, and at the same time the extent and severity of the urethral and bladder inflammation, which latter points are of paramount importance in regard to the patient's ultimate cure, and which, strange to say, are frequently ignored or overlooked by the operator, who apparently considers that dilatation or cutting is all that is really essential, and that a chronic urethritis or urethrocystitis is of little or no importance. The condition of the prostate gland, the seminal vesicles, and in fact all of the structures opening into the urethra must be ascertained, and appropriate treatment instituted if diseased conditions are found.

As a broad general rule, it may be safely stated that the best routine treatment for recent and even fairly-recent cases of gonorrhreal stricture, is careful and gradual dilatation, combined with instillations or irrigations, and appropriate diet and internal medication to render the urine bland and non-irritating; if gradual dilatation fails, or for any reason cannot be employed, we then resort to one of the cutting operations about to be described, being guided in our choice of procedure by the location and extent of the contraction, which is readily ascertained by the *bougie à boule*.

For clearness and conciseness of description we will first consider stricture of the meatus; second, stricture of the pendulous urethra, and, third, stricture of the bulbous portion and at the bulbo-membranous junction.

Stricture of the Meatus.—As a general rule

¹ Read before the New York Academy of Medicine, March 21, 1901.

stricture of or just within the meatus does not yield to dilatation and must therefore be incised by meatotomy in the following manner: The patient having urinated, the external genitals are thoroughly cleansed, as is also the anterior portion of the urethra by irrigations of boric-acid or salt solution and the parts surrounded with sterile towels. Local anesthesia is produced by injecting a little cocaine solution into the fossa navicularis; the contracted meatus is then slowly incised with a straight, blunt bistoury downward on its floor and directly in the median line up to about No. 28 or No. 32 of the French scale; according to the requirements of each individual case; contractions in the fossa navicularis are dealt with in the same manner, except that an incision may have to be made in the median line of the roof, as well as in the floor of the canal. The urethra is then irrigated, and a full-size sound passed beyond the wound. A snug dressing of sterile gauze prevents subsequent bleeding from the little incision, which should be kept open and made to heal from the bottom, by the daily passage of full-sized sounds.

Stricture of the Pendulous Urethra.—If the contraction is soft and yielding it should always be treated by gradual dilatation with soft bougies until we have reached about No. 18 of the French scale, when steel sounds are to be substituted. As a general rule it is best to practise dilatation every fifth or seventh day, leaving the instrument in place for several minutes in order to exert pressure and dilatation on the stenosed and thickened urethral walls; these patients should also have instillations or irrigations of silver nitrate which are of the greatest value in bringing about a healthy condition of the infiltrated urethral and peri-urethral tissues.

If, after a careful trial, gradual dilatation fails, the stricture must then be cut by internal urethrotomy in the following manner: The patient, having urinated, is anesthetized and the external genitals and urethra prepared for operation in the usual manner. If the stricture is fairly near the meatus it can be cut with a straight, blunt bistoury, but, if further down the canal, with any good urethrotome, according to the size or caliber of the constriction and also the surgeon's personal preference for any special instrument; the important point to remember in this operation is that the cutting instrument should always be held firmly in the median line, and the penis pulled out over it, and well on the stretch, so that the incision will be as nearly as possible in the middle line of the roof of the canal, which should be cut up to about No. 25 or 30 of the French scale, rarely higher. A full-sized sound or *bougie à boule* is now passed to see that all is clear and the urethra thoroughly irrigated with warm boric-acid solution, several ounces of which are thrown into the bladder and left there, so that the first urine passed will be

fairly well diluted. The subsequent treatment consists in the frequent passage of full-sized sounds and the employment of irrigations or instillations, according to the requirements of the case, until the urine is clear and the urethra taking reasonably large instruments with ease, when the intervals are made much longer.

If after the operation the patient shows any signs of urethral fever, all of the urine must be carefully drawn with sterile catheters, and the bladder and urethra irrigated with warm sterile and non-irritating solutions, and urotropin, or boric acid, administered by the mouth in full dose.

Strictures in the Bulbous Urethra, and at the Bulbo-membranous Junction.—Strictures in these regions, as in the penile urethra, should if possible be treated by gradual dilation and local medication; if, however, they are fibrous, dense and unyielding, then external urethrotomy or perineal section is the operation of choice, as by it the contraction is thoroughly incised and the bladder and bulbous urethra are freely drained, thus obviating the danger of urinary infection; the same end can also be accomplished by first cutting the stricture from within (internal urethrotomy) and then doing a small external urethrotomy for drainage; personally, however, I see no advantage in this double procedure over an ordinary external urethrotomy in which the stricture is cut and the bulb and bladder drained at the same time.

External urethrotomy having been decided on, the patient is kept quiet for a day or so before the operation, and put on a light nourishing diet with perhaps strychnine and quinine in full doses. Alcohol must be stopped or taken in great moderation, and the urine rendered bland and sweet by plenty of water and proper internal medication. The urethra and, if possible, the bladder should be irrigated daily with boric-acid or mild silver solutions. The bowels must be kept open and, on the morning of the operation, the rectum emptied by means of an enema.

Operation.—The external genitals and perineum having been properly prepared, the patient is etherized and placed in the lithotomy position. The urethra and, if possible, the bladder are irrigated with boric-acid or salt solution, and the surrounding parts covered with sterile towels. If possible a tunneled sound, or, that failing, a filiform bougie is passed through the stricture into the bladder and held there by an assistant who at the same time retracts the scrotum. An incision is then made in the median line of the perineum down to the urethra, which is opened on the guide by a single clean cut, and all of the stricture tissue carefully incised not only on the floor but also on the roof of the canal. The index finger is now passed into the perineal wound and backward on the roof of the canal into the bladder, as on its way it readily detects any bands or

masses that have not been thoroughly divided. The dilatation of the posterior urethra by the index finger prevents in a great measure post-operative tenesmus with painful efforts to expel the tube. The perineal operation being completed and bleeding controlled, a full-sized sound should be passed from the meatus into the bladder in order to ascertain that the whole length of the urethra is clear; if obstructions exist, they may be removed by meatotomy, internal urethrotomy, or post-operative dilatation.

A large soft-rubber perineal tube is introduced into the bladder just far enough to allow the urine to drain freely, and secured in place by a heavy silk suture passed directly through it and both edges of the wound, which is then lightly packed with gauze, and the suture tied. The bladder is then irrigated and partially filled with boric-acid solution and the tube clamped until the patient is put to bed, when it is attached to the usual siphon apparatus, and an opium suppository administered.

On the second day after the operation the tube is taken out, washed and replaced; it is removed permanently on the fourth or fifth day and the patient allowed to be up and about and passing his urine both by the urethra and the perineal incision. In the majority of cases all of the urine is passed by the urethra in about one week after the removal of the tube, although in some the urethral wound remains patulous for a longer period.

When the tube is first taken out for cleaning, a medium-sized sound is passed to the bladder; this is repeated regularly every second or third day, until the perineal wound is cicatrized, and the urethra taking a No. 28 to 31 French with ease, according to the case, when the intervals are made longer. After the sound is removed the tube is replaced and the bladder and urethra irrigated with boric-acid solution, and on the alternate days, if indicated, with a mild solution of nitrate of silver. The perineal wound should be inspected every day to see that it is healing solidly from the bottom by firm, healthy granulations. When the perineal wound is cicatrized, the urethra taking a full-sized sound with ease and the urethrocystitis improving, the patient must be made to understand clearly that the operation has not cured his stricture, but merely divided it, and that he must continue to have sounds passed at long intervals (once or twice a year) for the remainder of his life; also that he must not stop bladder or urethral medication until urination is normal and the urine practically free from tissue elements.

If at the time of the operation it is found impossible to pass any instrument through the stricture, a grooved staff or tunneled sound may be passed down to the anterior face of the contraction and the urethra opened on the groove of the instrument just in front of the stricture; the cut edges of the urethral wound

being separated by long silk ligatures passed through them. The staff is now withdrawn and the ligatures retracted, which gives the operator a clear view of the anterior face of the stricture, which is carefully examined for its opening by means of a fine grooved director, or filiform which is passed through it into the bladder. The stricture is then divided with a small bistoury, and a full-sized sound passed from the meatus.

If, however, the opening in the stricture cannot be found the surgeon will have to complete the operation without a guide, cutting through the stricture slowly and carefully in the median line with perhaps the left index finger in the rectum, which keeps the operator informed as to the proximity of the gut and also the position of the apex of the prostate gland. The mucous membrane of the roof of the urethra is also a serviceable guide, as it can be plainly seen and felt.

In those rare and exceptional cases which will not admit of the passage of any instrument through the anterior urethra, we are compelled to do an external urethrotomy without a guide, or, more correctly speaking, a true perineal section. The patient being in the lithotomy position, the left index finger is introduced into the rectum and its tip kept in contact with the apex of the prostate, the operator cutting down to the urethra by careful dissection, as in an external urethrotomy. The canal having been found and opened, the index finger is passed through the perineal wound into the bladder, and all of the stricture tissue thoroughly divided. In those old and neglected cases of gonorrhreal stricture, in which the perineum is riddled with urinary fistulae and sinuses, and in which the urethra is converted into a fibrous cord, and cannot be entered by the perineal route, the surgeon may resort to retrograde catheterization, through a small suprapubic incision. These advanced cases, however, are seldom met with at the present time, except in hospital practice, and then but rarely. The drainage and the subsequent treatment in these latter cases are precisely the same as described for simple external urethrotomy with a guide.

Miscellaneous Methods of Treatment.—Under miscellaneous methods of treatment may be mentioned rapid dilatation, continuous dilatation, divulsion, electrolysis, and urethrectomy.

If the stricture will admit of the passage of a filiform, it may be left in place as a guide, and tunneled sounds of increasing sizes passed over it through the stricture, which can in this manner be rapidly dilated at one sitting provided it is not too fibrous. This method of treatment is attended with risk, and should therefore never be employed except in an emergency, and unless the patient can remain in bed and be under the surgeon's personal observation.

Any instrument, no matter how small, that has been passed through a tight stricture, may be retained for a few hours, or even a day or so, as by its *continuous dilation* it frequently acts most satisfactorily on the thickened area and is therefore of service in certain selected cases.

The treatment of stricture by *divulsion* or *rupture* with especially constructed instruments is, to say the least, bad surgery, and is too rough, dangerous and inexact ever to be advised or employed.

As *electrolysis* is only of questionable service in strictures of the soft variety, it is merely mentioned to be condemned, as in this variety of cases most satisfactory results are obtained by gradual dilatation and urethral medication. It has practically no effect whatever upon dense fibrous strictures which always demand free incision either from within or without.

By *urethrectomy*, the stricture tissue is excised or resected at the time of the external urethrotomy or perineal section, and a new urethra built up and around a retained soft rubber catheter or tube. This method, if employed at all, should be reserved for those cases in which there is a great deal of localized and dense fibrous tissue about the canal.

THE TREATMENT OF THE COMPLICATIONS OF ACUTE GONORRHEAL POSTERIOR URETHRITIS.¹

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Of the topic for the evening the division that has been assigned to me by the courtesy of our President will admit of subdivision into local complications and remote or general complications. The local complications are: Urethrocystitis, cystitis, ureteritis, pyelitis, pyonephrosis, funiculitis, epididymitis, prostatitis and seminal vesiculitis. The general complications include: Arthritis, endocarditis, pericarditis, pleuritis, meningitis, iritis and certain rarer inflammatory affections of the eye; but the limitations prescribed for this paper require that of these only arthritis, otherwise gonorrhreal rheumatism, be considered, it being the most common manifestation of the systemic infection.

The local complications, through continuity of tissue, are peculiarly interdependent. Certain ones are intimately so and, in consequence, scarcely admit of distinction as entities. Hence it is convenient to take them up in the order of anatomical sequence, though thereby the most

frequent be brought into apposition with the most infrequent.

Before considering the treatment of each in turn it will be well to enumerate certain essentials common to the treatment of all. The underlying physiological principle is: The avoidance of whatever directly or indirectly, by irritation or stimulation, excites in the genito-urinary system hyperemia or congestion. Therefore abstinence from sexual excitement, passive as well as active, recumbency, bland and antiseptic urine, regular, easy stools, an exclusive milk diet, abstinence from alcohol, tobacco and coffee, and no instrumentation nor irrigations, are the ideal fulfillments of the primary indication. So far as possible they should be realized, but the law of compromise cannot be set aside. Antiseptic urine can be approximated only; the exclusive milk diet may have to give way to a mixed fluid diet; alcohol, tobacco and coffee—any one or all three—may have to be reduced before they can be removed, depending upon the patient's dependence upon them.

As to instrumentation and irrigation, whether or not the gonococcus, unaided by some other form of infection, is capable of invading the genito-urinary organs beyond the confines of the urethra, authorities are not agreed; but they are agreed that the traumatism of instrumentation favors each and every infection, causing as it does abrasions and congestion if no higher grade of inflammation. Therefore instrumentation is deprecated, and when, for the relief of the patient's sufferings, surgical intervention by instrumentation or otherwise becomes imperative, any crude or coarse manipulation is a perversion of the last resource. Reduced to rule, the more skillful and the more conservative the local treatment of any infected region of the genito-urinary tract, the greater the prophylaxis for the endangered contiguous region. Finally, throughout the course of any complication, the patient's general health and vital resistance should be maintained as high as possible.

Urethrocystitis implies that the trigonum has become involved by extension of the inflammatory process from the posterior urethra. The term is not in common use, the symptoms and treatment of posterior urethritis and this complication in their acute stage being so nearly identical that they rarely are differentiated in the average clinical history.

In the treatment the chief indication is bland and antiseptic urine. This is met by a milk diet, water between meals, and the so-called urinary antiseptics. If the patient cannot tolerate an exclusive milk diet a demulcent drink offers a compromise. The quantity of this and of water to be taken as a diluent depends upon the quality and reaction of the urine, and the severity of the tenesmus in the given case. The object is to render the urine bland without unnecessarily augmenting the quantity, whereby the patient's urinations would be multiplied and his sufferings increased. The question of giving alkaline

¹ Read before the New York Academy of Medicine, March 21, 1901.

diuretics will arise. As a rule they are not necessary. A strongly alkaline urine is not demanded by the indications. On the contrary, it is distinctly contra-indicated, because it invites infection of the bladder, especially if there is any retention, and, secondly, because it antagonizes those most valuable urinary antiseptics—urotropin and cystogen. The best substitute for either is salol in full dose.

In spite of the bland urine the tenesmus may be so severe as to require anodynes. Hyoscyamus, belladonna or atropine, and morphine, by rectum, by mouth or hypodermatically, are the only positive ones. Upon the too-ready use of the last-named should attach the restriction that with a *neglected* urethrocystitis complicated by a stricture not infrequently begins the habitual use of the drug.

As to local treatment, a moderate number of cases do well without any during the acute stage, aside from hot sitz-baths and fomentations, the general treatment sufficing to carry them through comfortably. In a second class of cases the severity of the symptoms will suggest the use of rectal irrigations of normal salt solution in temperature from 105° to 120° F., by means of the Kemp, the Guiteras, or Chetwood tube, once, twice or three times a day. The teasing desire to urinate and the tenesmus often are lessened by this means. A third class, that in which there are extreme frequency, urgency and tenesmus with bloody urine—a few drops of which are squeezed out every ten or fifteen minutes—demands in addition something more radical. The patient's suffering makes instrumentation imperative, there being no alternative. After washing the glans penis and anesthetizing the penile urethra, a smooth, blunt, sterile soft-rubber catheter, lubricated with lubricidrin (glycerin irritates some urethrae), is passed into the bladder slowly and with the utmost gentleness. The obstructing spasm that usually under these conditions is encountered in the membranous urethra will yield after a few minutes of continued gentle pressure, aided if necessary by the instillation through the catheter of a two-per-cent. solution of cocaine. According to the tolerance of the inflamed and hypersensitive tissues, from a few minims to a dram or two of a warm solution of silver nitrate, one-half to one grain to the ounce, are now slowly instilled into the bladder, the catheter withdrawn and the patient allowed to void the solution. In the majority of cases the relief that follows the temporary aggravation of the symptoms is surprising. The instillation may be repeated after forty-eight hours if the first gave relief and if the symptoms return; but if it did not give satisfactory relief, a solution of protargol, from one to eight per cent., may be tried instead of silver nitrate.

Two observations should be added here: (1) From the results obtained by the use of from one- to eight-per-cent. solutions of protargol in the subacute and chronic stages of urethrocystitis, it is fair to assume that the same solutions

would be of benefit in the acute stage, thus avoiding the preliminary irritation of silver nitrate. As yet I have not had an opportunity to test the assumption. The beneficent effect of the one-per-cent. solution of protargol used as a hand-injection in acute gonorrhreal anterior urethritis is not better manifested than in the distinctly infrequent occurrence of the severe grades of posterior urethritis and consequent urethrocystitis. (2) Irrigation of the bladder from the meatus with a warm solution of boric acid, borolyptol, potassium permanganate or mercuric bichloride in proper strength sometimes gives satisfactory relief when it can be performed; but to most patients with acute urethritis it is a distressingly painful procedure and hence should not be performed; in others, because the patient cannot relax his vesical sphincter, the irrigation cannot be performed. Moreover, the danger of causing epididymitis by such irrigation is great, especially if antecedent attacks of posterior urethritis have left the ejaculatory ducts rigid with inflammatory deposit, and, as a consequence, their mouths more or less patent. Finally, irrigation of the bladder from the meatus is dangerous under the conditions given, it having been demonstrated that rapid filling of the bladder to its point of toleration under pressure when tenesmus is present is very liable to drive some of the fluid into the ureters, thereby exposing them to infection either directly by contact or indirectly through the induced hyperemia.

The course of urethrocystitis and its prognosis are those of posterior urethritis. It tends to chronicity. Ulceration from this cause is rare.

Cystitis, meaning thereby acute general cystitis, occurs infrequently as a complication of gonorrhreal posterior urethritis. The greater constitutional disturbance in the form of fever and the larger area of hypogastric pain and tenderness serve to differentiate it from urethrocystitis and to offer the few additional indications for purely medical treatment—the exhibition of antipyretics, as well as sedatives and anodynes, and the more liberal employment of fomentations with counterirritants.

The surgical treatment is that of urethrocystitis, slightly modified. When to resort to it must be determined by the symptoms. If possible it should be postponed until the subacute stage, but at whatever stage employed the decision as to the solution for instillation should be in favor of the milder, if not the mildest, for two reasons, first, that vesical congestion be not unwarrantably increased; second, that the instillations may be repeated in the form of small irrigations to wash away the accumulated pus and *débris* of the inflammatory process before a final instillation is made to be voided by the patient after the catheter has been withdrawn. The solution recommended is one-per-cent. protargol; it combines a maximum specific effect upon the gonococcus with a minimum of irritation. The solution must be introduced into the bladder very slowly and the quantity must be small—an ounce

or less. Here, as in urethrocystitis, forcible irrigation is overzealous treatment and is to be condemned on the grounds already given.

Ureteritis and pyelitis are so intimately interdependent and the symptoms of one so blend with those of the others that they must be considered as one. They are serious complications; by them the integrity of the kidney and the life of the patient are endangered. Hence proper treatment of the antecedent and associated cystitis has an important prophylactic value. Fortunately the complication is rare.

Like the bladder, the ureter and pelvis of the kidney, by reason of their squamous epithelium, present a barrier to gonococcus infection; it is highly probable that the soil must be prepared by an antecedent or coincident infection of another order before the gonococcus can flourish. Equally, like the bladder, anything causing congestion in the ureter predisposes to infection, as, for example, the presence of a calculus or an elbow or twist, as may occur with movable kidney. Associated with tuberculosis, a gonococcus invasion of these regions produces a very severe form of inflammation.

The treatment of ureteropyelitis is directed specifically against the local inflammation and against the occurrence of kidney congestion or hyperemia. Hence recumbency, fomentations, counterirritation and cupping, milk diet, diaphoresis and a mild degree of catharsis are imperatively indicated. Meanwhile the dose of urotropin, cystogen or salol, is diminished because of the possibly irritating effect upon the kidneys, while diuresis is continued to avoid any accumulation of thick pus which alone, by partially obstructing the flow of urine to the bladder, would become a potent cause of renal hyperemia through the pyonephrosis induced and possibly eventuate in pyelonephritis. The constitutional disturbances are treated symptomatically, and the cystitis or the urethrocystitis are not neglected. It would seem a provision of Nature that the inflammation tends to spend itself in the pelvis of the kidney instead of at once invading the kidney proper. Hence resolution is the rule in the recent cases, especially if the usual contributing causes—urethral stricture and cystitis—are relieved by judicious treatment.

If, by the well-recognized symptoms—chill, fever, pain, diminution of urine, and later a tumor—pyonephrosis is diagnosticated and the patient is obviously losing ground, drainage of the renal pelvis through a lumbar incision should be resorted to. If the operation is contra-indicated by any fact, gentle pressure over the kidney and along the ureter may be undertaken in the hope of overcoming the obstruction and so evacuating the pus by way of the ureter, or, aspiration may be performed. There is danger of rupturing the pyonephrosis by the former measure; aspiration rarely effects permanent relief.

The prognosis after drainage under these conditions is fairly good, provided pyelonephritis has not developed before the operation. The last-

named condition calls for nephrectomy, provided the other kidney is present and normal, as offering the only chance of saving the patient's life. The details as to indications and contra-indications, however, are beyond the scope of this paper.

Supposing the acute ureteropyelitis to have subsided without invasion of the kidney, and the chronic stage to have been reached, catheterism of the ureter to prevent stricture and for irrigation of the kidney pelvis may be thought necessary. On the other hand, in the face of a smoldering gonococcal inflammation, the traumatism and consequent congestion of catheterism may make that procedure a rash one. It will be safer to treat the ureteropyelitis by treating the now subacute or chronic cystitis or urethrocystitis by appropriate instillations and irrigations, and by diluents and appropriate medication. Upon their cure depends that of the ureteropyelitis eventually.

Funiculitis of gonorrhreal origin is an inflammation of the whole spermatic cord by extension from the vas deferens as one of its component parts. It is not a common complication. Two forms are described, the simple or serous funiculitis—practically a diffuse hydrocele of the cord—and the phlegmonous funiculitis. Obviously peritonitis is possible from this source.

The treatment is suspension of all direct treatment of the urethra, anterior and posterior alike, recumbency with elevation of the hips, leeches, cold by means of an ice-bag or evaporating lotions, and a mild mercurial purge. If the cold is not well borne or later, if suppuration is inevitable, moist heat is to be substituted and the pus evacuated by incision. In the presence of marked edematous swelling without suppuration an incision may be necessary to relieve the tension and consequent pain. Whether suppuration has occurred or not, moist heat in the subacute and chronic stages will favor resolution. In addition mercury and iodide of potassium should be administered, because of their aid in causing the absorption of recent exudates, that every effort may be made to avoid occlusion of the vas deferens. If a patient will consent to go to bed as soon as pain or aching or a dragging sensation has developed in either or in both groins, it may be possible, by the application of cold to the affected groin and by supporting the testicle with a sling, to spare him the succeeding complication—epididymitis.

Epididymitis and epididymo-orchitis of gonorrhreal origin usually are severer in both local and constitutional signs than those due to traumatism. In this discussion we may, for the sake of brevity, regard orchitis as a complication of epididymitis and deal with the latter alone. It constitutes the most familiar, if not the most common complication of acute gonorrhreal posterior urethritis. This fact, together with the destructive effect it may have upon the man's virility, makes it most important.

As to treatment, to that of the first stage of

funiculitis is added immobilization of the inflamed epididymis. This is the cardinal point. The ordinary suspensory bandage does not suffice. The scrotum must be reflected upward until the testicles rest upon the pubes, and by means of a sling adjusted from a broad belt about the waist, they must be retained in that situation. The character of the application made to the scrotum over the affected epididymis is not of vital importance. Speaking generally, if the case is seen within the first twenty-four hours an ice-bag is indicated, and may be kept in position so long as it continues to give comfort. If the case is not seen within the early stage, and whenever the ice-bag does not afford comfort, moist heat should be employed. The "continuous poultice," as it may be called, is formed by surrounding the inflamed organ with a compress wrung out of hot water and covered with rubber tissue. An anodyne ointment, containing menthol and belladonna for example, may be similarly used. The evaporating and anodyne lotion of tinct. aconit., tinct. opii, liq. plumbi subacet. dil. and aqua may be preferred. As counterirritants, guaiacol and nitrate of silver, gr. 60 to the ounce, painted over the scrotum, may be employed at any period of the acute stage. The relatively new compound guaiacol-vasogen is similarly useful. In the declining stage, the "continuous poultice" in the form of compress or ointment covered in by rubber tissue should be worn and mercury and iodide of potassium should be exhibited for the reasons and the purpose mentioned under funiculitis. It may be necessary to continue this part of the treatment many weeks.

Suppuration is not as common in gonorrhreal epididymitis as it is in that occurring in the course of catheter life. It requires incision and drainage.

The febrile movement and the pain of an acute epididymitis may make the administration of an antipyretic and analgesic desirable.

Acute prostatitis is a fairly frequent complication. It gives rise to constitutional symptoms that usually require active treatment, and to local pain that demands relief by anodyne suppositories or by morphine with atropine injected into the perineum. The urine is to be kept in quantity and quality, and instrumentation rigidly restricted, as in urethrocystitis and cystitis. Elevation of the hips and support of the testicles are important.

The local treatment as such is, at the outset, leeches applied to the perineum and to the margin of the anus, continuous cold to the perineum by means of an ice-bag, and intermittent cold directly to the prostate by means of a small rectal psychrophore. On the other hand, the effect of heat in relieving the urethrovesical spasm and in avoiding the tendency to it, may make it the part of good judgment to substitute poultices and hot rectal irrigations with normal salt solution. The rectal instruments chosen for these cases should be small, and if by their pressure they cause pain or an aggravation of the symptoms, their use should be discontinued.

Meanwhile, by digital examination at regular intervals, signs of suppuration are sought in the gland. It occurs occasionally. The detection of an abscess in the prostate is not always easy, especially if the focus be deep-seated. Consequently, it not infrequently happens that before fluctuation becomes manifest to the finger a sudden gush of pus from the urethra during an effort to urinate marks the rupture of a follicular abscess. Retention of urine in the course of acute prostatitis makes it highly probable that an abscess is pointing toward the urethra or the bladder. This secondary complication necessitates using the catheter, the very introduction of which is the means often of rupturing the abscess.

When fluctuation is discovered, the abscess should be evacuated and drained through a transverse perineal incision. It should be noted that the pus first escaping through such an incision may come from a periprostatic abscess, and that unless this cavity is explored, and the prostate palpated by the finger, an abscess in one or the other lobe may be overlooked. If there is any doubt, an aspirating-needle should be passed along the finger as a guide and pushed onward into the suspected lobe. If pus is drawn, an opening is made along the course of the needle and drainage established.

The treatment of the subacute and chronic stages of prostatitis, whether the acute stage ended in resolution or in suppuration, can be given only the briefest summary in this paper. Digital massage of the gland, hot rectal irrigations, bladder irrigations, and instillations into it and the deep urethra, form the outlines.

Acute seminal vesiculitis about equals acute prostatitis in occurrence. With epididymitis and prostatitis it forms a trio of interdependents, any one or two of which, however, may exist without the others. The treatment is that of acute prostatitis in all respects with, in addition, appropriate medication to relieve the priapism—a somewhat pathognomonic and very annoying symptom of acute inflammation of the vesicles.

Suppuration within the vesicle very rarely requires surgical intervention; the pus finds exit through the ejaculatory duct. If, however, a perivesiculitis goes on to suppuration, the abscess must be evacuated. The pus can be reached through a transverse, a curved or a U-shaped perineal incision. The necessary dissection is facilitated by having the patient in the knee-chest position with the thighs astride the table as recently recommended by Dr. Fuller.

The treatment of subacute and chronic vesiculitis also is that of the corresponding stages of prostatitis. It should be noted that when to begin the massage, whether to continue it, and how often to repeat it, depend upon the condition of the inflamed organ and the effect produced.

Gonorrhreal rheumatism, as representative of the general or systemic complications, may occur at any time in the course of either anterior or posterior urethritis. Usually, however, it occurs

later, rather than earlier, and therefore is associated with the latter.

Internal medication is directed chiefly against the constitutional disturbance. Though anti-rheumatics are of little avail, they should be tried. Oil of gaultheria would seem to be the most reliable. Iodoform until headache develops, or the odor is noted in the feces has been advised. A German observer (Ruheman) has used protargol in three-grain pills, three to four times daily, with apparent good results.

The local treatment is all important. Immobilization by a posterior splint or a fenestrated plaster-of-Paris dressing; counterirritation and blistering, by the nitrate-of-silver stick, or the Paquelin cautery, for example, and cold by means of the ice-bag are indicated in the early stage. Later, the ice-bag is replaced with poultices and they in turn with compression, if effusion into the joint has taken place, to hasten the absorption of the fluid. In this, iodide of potassium internally, may assist. Well on in the subacute stage daily massage and tentative passive motion are begun.

In the event of severe suppuration within the joint tapping and irrigation with a solution of carbolic acid or mercuric bichloride under strictest surgical precautions are indicated. Suppuration in the peri-artritic tissues calls for incision and drainage of the same. In the severest cases of suppuration within the joint, arthrotomy, irrigation and drainage may become necessary. After any one of these operations, follow in turn immobilization, compression, massage and passive motion. The treatment of the urethritis, meanwhile, should be active, yet conservative, as instrumentation in acute urethritis often seems to precipitate a gonorrhreal rheumatism in a predisposed patient. In proportion as the infection is arrested at its source the arthritic manifestations subside. Consistently the general health should receive attention, as most sufferers from gonorrhreal rheumatism are anemic and have not vitality enough to resist infection.

MEDICAL PROGRESS.

Toxemia of Pregnancy.—It is still very uncertain what is the true cause of systemic poisoning which occurs during pregnancy, but it is probable that it depends upon many factors. The warning sign, however, which points to danger is, according to S. MARX (*Med. Rec.*, Apr. 20, 1901) the diminution in the amount of urea excreted. Women may go to term with albuminuria and casts without symptoms of toxemia, and in the most malignant cases there are neither casts nor albumin found. The excretion of urea is the important sign to be watched and regular examinations should be made upon twenty-four-hour specimens to determine the ability of the system to excrete the poisonous principles. The essential point in treating a uremic condition lies in the stimulation of all the emunctories. Calomel, jalap, elaterium or the salines work best upon the

bowels, while the skin is best stimulated by hot packs, sweatings or mild diaphoretics. Pilocarpine is not recommended. To increase the function of the kidneys, a milk diet, an abundance of water to drink and hot rectal or colon irrigations, quarts being used at a time, seem to be the most efficacious. When the heart is overacting and the pulse large and bounding venesection is frequently of great value. The vasodilators are the most valuable drugs, nitroglycerin, chloral and small doses of opium. Sparteine and caffeine are useful cardiac stimulants. Digitalis is frequently too irritant for the kidneys.

Malignant Endocarditis.—Three cases of this disease are reported by A. E. ROUSSEL (*Med. Rec.*, Apr. 20, 1901) one of which followed an attack of measles, another developed during a convalescence from typhoid and the third succeeded closely upon a miscarriage of twins and finally resulted in recovery. Only three instances are noted in literature where malignant endocarditis was secondary to measles and yet the reported case seems to be an undoubted illustration. In Osler's collection only four patients under ten years developed malignant endocarditis during or succeeding an attack of typhoid. One of the reported cases was that of a child of nine years of age who had all the characteristic symptoms and signs of that condition. The leucocytes also rose to 50,000 which seldom occurs in these conditions. The third case might be considered of doubtful diagnosis on account of the recovery, but the patients manifested all the usual symptoms. She had a large liver and spleen, ran an irregular temperature with occasional chills and sweats, had multiple abscesses in various parts of the body and cultures from the blood showed streptococci. Later in the illness she developed systolic murmurs over the apex and base, had considerable pain in the precordial region and the heart's action because tumultuous and diffuse. It is now believed that the simple endocarditis is usually infective, the difference between it and the malignant form depending upon the virulence of the germ. The staphylococcus is the more fulminating form, the pneumococcus and streptococcus infection being long drawn out.

Diagnosis of Ectopic Gestation.—The symptoms which should lead to a recognition of the above condition may be divided into ordinary and extraordinary. A. F. CURRIER (*N. Y. Med. Jour.*, April 20, 1901) mentions among the first class all the symptoms and signs which are present during the early weeks of a normal pregnancy: Points in the history which may lead to the suspicion of an ectopic gestation are retroflexion of the uterus, previous sterility, disease or dislocation of the Fallopian tubes, a bicornate uterus or a previous ectopic gestation. The most important of the extraordinary signs is hemorrhage. This is seldom external or manifest. A fetal sac at the fimbriated end of the tube seldom progresses to the end of the first month without rupture. When within the tube abortion usually

occurs between the sixth and twelfth weeks. The weakness of collapse, the flickering pulse, the pinched face and the shallow breathing is most significant. Next in importance is pain. It is always present, usually paroxysmal, sharp and darting and the thigh is commonly flexed upon the abdomen. Whether due to the stretching or rupture of the peritoneum or to a localized peritonitis it is not known. The presence of a tumor made out most easily by rectal bimanual examination under ether, if necessary, is the third diagnostic point. These three symptoms—hemorrhage, pain and tumor, are the most important of the extraordinary symptoms and are the most constant. An early diagnosis is usually necessary to a successful termination of the case by surgical interference.

Cystinuria.—Only seventy-five cases of this malady have been found in literature and no recoveries reported. A fermenting organism is supposed to produce cystine and intestinal digestion is usually the function attended to. J. REID (*N. Y. Med. Jour.*, Apr. 20, 1901) had a patient suffering from painful micturition in whose urine cystine was present. An ulcer in the anterior urethra was finally healed by local application of calomel and by the internal use of gray powder, and later, by the use of quinine and tannic-acid powders the cystine entirely disappeared.

Acute Spinal Ataxia.—This condition, coming on in a few days or weeks, is characterized by a marked ataxia of the lower extremities with some temporary or minor sensory disturbances and is usually classified as an acute cerebral or cerebellar ataxia, an acute peripheral ataxia due to multiple neuritis or an acute form of tabes dorsalis. C. L. DANA (*N. Y. Med. Jour.*, April 20, 1901) reports four cases without autopsies and advances the theory that they are due to senile arterial changes or to syphilitic lesion of the posterior blood-vessels of the spinal cord, causing either a blocking or hemorrhage with the usual reactive process. All cases showed a marked ataxia. They could not walk except in the characteristic ataxic manner. There was some disturbance of cutaneous sensations, but no loss of pain or thermic sense. The knee-jerks were absent in two cases, slightly exaggerated in one. There was some paresis, but no wasting and no reaction of degeneration. The bladder and rectum were slightly disturbed. The patients suffered no pain either at the onset or later. The prognosis seems to be very good for the improvement is usually decided though rather slow. The acute onset, the age of the patients, usually above fifty, the history of lues, and the characteristic symptoms, all make it practically certain that it is a vascular disorder involving either hemorrhage or softening. The absence of pain or fever and the rapid recovery show that the process is not an inflammatory or degenerative one.

Obstetric Hemorrhage.—The antepartum hemorrhages suggest miscarriage, placenta pre-

via, premature separation of placenta, ectopic gestation, rupture of uterus, or menstruation during gestation, yet, writes J. CLIFTON EDGAR (*Amer. Gyn. and Obstet. Jour.*, Apr., 1901) they may be due to the fever and local hyperemia of the exanthemata as variola, scarlatina, and measles, of venous obstruction due to heart, liver and visceral conditions, of hematosalpinx, sarcoma, fibroma, polypus, and epithelioma. Less frequently the hemorrhage comes from the urethra or other extra-uterine source. The most important of all is the bleeding indicative of a threatened or inevitable abortion. Severe hemorrhage from low implantation of the placenta is much more common than generally believed. The hemorrhages of labor are due to premature separation of the placenta, ruptures of uterus or cervix, and fibroids, malignant disease, or varicose veins. In the third stage uterine inertia is the most important factor, next, lacerations of the genital tract, insufficient contraction of the lower uterine segment, partial or complete inversion, or fibroids or cancer. Puerperal hemorrhages are due to mental emotions, disturbances of the circulation, malaria, albuminuria, sepsis, and the acute infectious diseases. Also locally to retained clots, placenta, or membranes, a secondary placenta, distended bladder or rectum, retroflexion, inversion, fibroid and polypoid tumors, cervical lacerations, malignant disease, and subinvolution. Pelvic hyperemia may be induced by assuming the upright position too soon after delivery or by too early sexual intercourse.

Renal Tuberculosis.—H. M. KINGHORN (*Montreal Med. Journal*, Mch., 1901) finds that the general symptoms are often lacking at the onset, but later there may be loss of appetite and weight, perhaps some night-sweats, and especially fever with evening rise. Polyuria is one of the first indications, and frequency of micturition, equally marked at night, is suspicious. At any time there may be a brisk emission of considerable pus; or blood in clots or streaks may appear. Blood not clotted is intimately mixed with the urine, and the hematuria may be intermittent, lasting for a few days at a time. The bacilli are differentiated with such difficulty from the smegma bacillus even with acid alcohol, that guinea-pig inoculation is the method of choice for diagnosis. The stain used in Trudeau's laboratory is carbol-fuchsin, which when washed and dried is decolorized with 25-per-cent. nitric acid, washed and dried, and placed for two minutes in 95-per-cent. alcohol. Tumor in the kidney region is a late symptom but should be looked for. Pain depends on involvement of pelvis or ureter, though if the kidney parenchyma is involved alone there may be a dragging sensation. As a rule the pain is uninfluenced by motion, but is quieted by the dorsal decubitus. It may be aggravated by meals, or a blow or cold, but chiefly before the monthly period. It may be sharp, simulating stone, possibly from the excretion of purulent lumps or phosphatic concretions, or from renal congestion.

Mediastinal Tumors and Aortic Aneurisms.

—The differential diagnosis between both conditions will always be a difficult chapter in medicine, since pressure symptoms form the dominant features in both, yet H. HAMPELIN (*Zeitschrift. f. klin. Med.*, Vol. 42, No. 304) gives a few valuable points, based upon an observation of 200 cases. Stenosis of the trachea points strongly toward aneurism of the arch or trunk of the aorta. Bronchial stenosis, on the other hand, occurs equally often in both conditions and betrays their presence more on physical examination of the lungs than by dyspnea. Symptoms of esophageal stenosis generally enable an exclusion of mediastinal disease and point more to changes of the esophagus itself, such as stricture and carcinoma. Recurrent paralysis is generally a symptom of aneurism. In doubtful cases a recurrent paralysis occurring in advanced age with cachexia will speak for tumor, while if occurring earlier, with syphilitic antecedents, aneurism is the more likely of the two. Premonitory pulmonary hemorrhages turn the evidence in favor of aneurism. Finally Oliver's symptoms and the X-rays may be resorted to, though the latter rarely give much help.

A Case of Acromegaly.—An interesting case in which the symptoms of acromegaly were well-developed, came under the care of M. A. TRACHTENBERG (*Zeitschrift. f. klin. Med.*, Vol. 42, No. 3 and 4). The patient, a woman aged thirty-one years, showed the typical increase in size of hands, feet and face, especially the lower jaw, where the nose was broad and thick, the lower lip indurated and everted, the tongue enormous and the uvula elongated. Among the typical symptoms may be mentioned thickening of sternum and ribs, a slight kyphosis, absence of menstruation and abdominal type of breathing, as well as dulness over manubrium, exophthalmos, temporal hemiopia, polyuria, general weakness and failure of memory. In discussing the disease the author ascribes the dulness over the sternum to thickening of that bone and does not think it indicative of hypertrophy or persistence of the thymus since postmortem examinations have often shown this to be absent and since, in his opinion, the disease is purely pituitary in origin, though it is by no means clear whether dependent on increased or diminished activity of that gland. Contrary to the observation of most other writers, no signs of hypertrophied left ventricle could be detected.

Uterine Displacement With Adhesions.—When F. H. DAVENPORT (*Amer. Gyn. and Obstet. Jour.*, Apr., 1901) finds the uterus tipped backward, immovable, and with ovary and tube matted to it with plastic material, he places the patient in Sims' position and packs the vagina firmly with pledgets of cotton soaked in glycerin. The upper two-thirds of the vagina must be filled, for it is pressure that is wanted. The first packing must not be too forcible, as the pelvis may be sensitive. The treatment is repeated every two or three days, and after two or three

packings the uterus is drawn down by a double hook in the anterior lip, and lifted by the fingers. If bands are felt, they may be massaged and lightly stretched. Definite results should show inside of about three weeks, and the softening and disappearance of exudates, and the extent to which the uterus has been replaced is surprising. At the approach of menstruation, a well-fitting pessary should be applied to be worn during the period. In obstinate cases the treatment may be prolonged for a second month. If the adhesions are very dense and the patient's sufferings are marked so that relief is imperative, removal of the appendages and amputation of the uterus should be performed. The breaking up of adhesions with ventral fixation gives only temporary relief. As such patients are usually sterile the question of pregnancy need not be taken into account.

Endocarditis.—In acute endocarditis F. L. NEWMAN (*Physician and Surgeon*, Mch., 1901) specifies four weeks as the shortest time for rest in bed and careful nursing. At this time in the sthenic cases tincture of aconite, 4 or 5 drops every three or four hours, will relieve an over-acting heart, and Dover's powder or morphine will control pain. However, the majority of cases are asthenic and require digitalis, strychnine, ammonia, or ether. Usually, however, digitalis is not necessary till the acute process is passing into valvular disease. The local application of heat or cold, or a large belladonna plaster to exert pressure is often very grateful to the patient. In chronic endocarditis whatever the lesion, when there is lack of compensation with venous congestion the treatment is that of cardiac dilatation. Previous to this no medicine is needed, but care in eating, and avoidance of overexertion. At first indication of heart-failure put patient to bed, have meals light, small and several times a day, and avoid large quantities of fluid as it increases too suddenly the contents of the blood-vessels. In aortic regurgitation digitalis by lengthening the diastole allows more blood to run back into the ventricle and so may produce anemia of the brain and even fatal syncope. Yet where the dilatation is the principal lesion there is no drug so tonic to the heart-muscle as digitalis. If the heart does not respond in a few days, compensation is probably gone forever. Strophanthus is next in importance; strychnine is valuable, and caffeine though uncertain in its action on the heart, is valuable for its diuretic powers. Nitroglycerin has no action on the heart, but decreases the resistance to its systole. The symptoms must be met as they arise. For palpitation there is the ice-bag, belladonna plaster, or hypodermic of morphine; for dyspnea, nitroglycerin; for enlarged liver, calomel or sodium phosphate; for bronchitis, codeine, morphine, heroin, or hydrocyanic acid. The edema should be relieved by punctures with a large-sized needle under aseptic precautions, and fluid in the pleural cavities should be removed without delay.

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SATURDAY, MAY 18, 1901.

THE LUNACY COMMISSION.

It has been said of Governor Odell that he has that most potent of faculties, "the seeing eye," and that he is able to divine by his knowledge of character whom to choose among the multitude to fill the positions of trust in the State.

Certainly no better instance of his penetration could be shown than in his appointment of Dr. Frederick Peterson of New York to the Presidency of the State Lunacy Commission, to succeed Dr. Wise. The success of every enterprise that Dr. Peterson has put through, in spite of the demands of a large consultant practice, has proved him a man eminently able to lead and to organize. His efforts that led to the establishment of Craig Colony for Epileptics afforded a practical illustration of the grasp of principle and detail that he possessed in adapting the bounty of the State to this branch of the dependent poor.

It is rare to find a scientific man who is an authority on his subject and at the same time competent and willing to apply his knowledge to public machinery. The acceptance of such an office by a man whose reputation is as well-known as Dr. Peterson's cannot be regarded otherwise than as a public spirited move, for

although he consented to serve on the condition that the office should not interfere with his practice, nevertheless the shouldering of so much responsibility and the expenditure of the necessary time is much for a man to give to the service of his State.

Every alienist in the State will feel that Dr. Peterson's appointment will bring a fresh stimulus to the work in psychiatry, and that the tendency to do something for the insane, apart from simple custodial care, will grow.

To the citizens of New York City who have been obliged to take the treatment that Bellevue offered them, the possibility of a Psychopathic Hospital comes like a prospect of relief from the very inadequate and inefficient provision made for the acutely insane in this city. The time is ripe for making advances in the administration of the city's insane asylums, and for doing original research work with the vast amount of clinical and pathological material at hand.

Everything is ready for a leader, and Dr. Peterson, who knows men and hospitals, here and abroad, who has directed laboratories, conducted clinics, and introduced a wholly original method of caring for dependents into the State, is just the man to introduce an era of brilliant work in psychiatry, and we congratulate Governor Odell for having put the right man in the right place.

IMMUNITY TO TYPHOID FEVER.

THE immunity to certain acute infectious diseases which is conferred by one attack has naturally led many to expect the same after typhoid fever. Kanthack (Allbutt's System of Medicine) states that recovery from typhoid fever implies an immunity which lasts for years. Dreschfeld, in the same work, mentions the existence of a natural immunity in some persons and says that acquired immunity is a well established fact. He cites as an example the fact that in over two thousand cases in the Hamburg General Hospital only fourteen were affected twice and one three times.

The Widal reaction is now usually considered as chiefly of confirmatory value, although many believe it to be of actual diagnostic significance in spite of the frequent tardiness of its appearance, its occasional absence in pronounced cases of typhoid, and its occurrence in other diseases. Grüber believed that a strong Widal reaction indicated the establishment of a corre-

sponding immunity to subsequent attacks. If this idea is correct and the presence of the agglutinating power of the blood serum is indicative of such immunity it must be conceded that the duration of the immunity is most uncertain, as the reaction sometimes fails early in convalescence and on the other hand has been observed after eight and twelve years.

That immunity is not always conferred by a first attack is illustrated by two cases reported by Nicol (*Lancet*, April 6). The first had a severe form of typhoid with hemorrhages in May, 1900. The Widal reaction was obtained. In November, 1900, he suffered from the disease a second time. It was moderately severe and of rather long duration. The Widal's reaction was again found. The second patient's first attack was in April, 1900, and the second in September, 1900, both of moderate severity. This does not necessarily show a second exposure to the disease. That the typhoid bacilli may live in the body without giving symptoms of enteric fever has been demonstrated by their frequent occurrence in the gall-bladder some time after the attack. In suppurative cholecystitis some months after convalescence from typhoid, a pure culture of the bacillus has been found. To what extent immunity has been conferred in such a case is doubtful.

The bacteria continue to live in the body, yet fail to give rise to the specific lesions which they usually cause. A second attack may be a relapse, that is, a return of the attack during convalescence, or a recurrence months or years later. The short interval between the attacks in Nicol's cases would suggest that the bacilli had remained in the body and their activity had been reawakened. If a durable immunity is conferred by one attack this should not occur. One would also expect the degree and duration of immunity to correspond with the severity of the attack.

The question is important in relation to the possibility of securing artificial immunity by anti-typhoid inoculations of the dead bacteria and their toxins. Nicol states that many of the soldiers who suffered from typhoid in South Africa had been inoculated in this way while en route thither by ship. Wright, on the other hand, presented statistics of 11,295 British troops in India and South Africa, 2,835 of whom were inoculated. Two and five-tenths of those not inoculated and only .95 per cent. of those inoculated were attacked by typhoid. His statistics of the besieged garrison at Ladysmith show that 14.1 per cent. of the 10,529 not inoculated suffered

from the disease, as against 2.05 per cent. of the 1,705 who were inoculated.

Comparison of the results obtained by many observers seem to show that, while immunity is not constant after one attack of typhoid, it appears to be established for an extremely variable period in many cases. The results obtained among the British troops in South Africa and India apparently justify the idea that inoculation confers immunity frequently enough and of sufficient duration to lead to further use of this procedure, at least in cases where large bodies of men are exposed to the disease under unfavorable circumstances.

THE PATHOLOGY AND TREATMENT OF PERNICIOUS ANEMIA.

THAT pernicious anemia is not necessarily a primary affection is a conception now held by many students of blood pathology. In many cases its secondary character needs no particular demonstration, but there has seemed to remain, as a nosological entity, the type of progressive pernicious anemia, originally described by Addison.

That this type of the affection might be due to some form of gastro-intestinal infection is the theory advocated by Dr. William Hunter, and recently set forth in a striking manner at the Medico-Chirurgical Society of London.

He concludes that a micro-organism, as yet not definitely isolated, brings about by means of the gastro-intestinal canal a specific infection which leads to the definite and characteristic symptoms of the affection. Oral, gastric and intestinal sepsis is the fundamental note of his theory and it is this sepsis which brings about the hemolysis, and the intermittent blood changes with the peculiar anemia, lemon color, dyspnea, hemorrhages and palpitation. Periodic disturbances of the viscera themselves are but indices of the local results of sepsis, and occasional toxemic effects marked by general nervous prostration, fever, sweating, ataxia and nerve storms are the consequences of a generalized infection.

Adopting this hypothesis he has been enabled to treat successfully some patients, one of whom was presented to the society as cured. The line of treatment is rigid antisepsis. Diseased teeth, infected buccal membranes and lingual lesions are to be energetically attacked. Gastro-intestinal lavage and medicinal antisepsis should be practised. In addition to the usual constitutional treatment with arsenic Dr. Hunter advocated the

use of the antistreptococcal serum. This was not directed against any known coccus, as such are not known to be hemolytic, but as a general measure.

Should further observation and treatment confirm Dr. Hunter's views, one more of the hitherto incurable affections may be said to have been conquered.

DOCTOR CHARLES RICE.

In the death of Dr. Charles Rice of New York the medical practitioners of this country have suffered a loss greater than they are perhaps able to appreciate because few of them in the hurry of their professional life pause to think of the source from which the materials of their art are derived.

The physician who has had little or no training in pharmacy takes the preparations that are given him, never asking any of the thousand and one questions that may arise regarding their purity nor their standardization, etc.

He remembers vaguely that there is such a standard as the *United States Pharmacopædia*; but of its character and its formation, its objects, its scope and its fundamental value to his daily work he rarely stops to think.

The *United States Pharmacopædia*, to-day, stands in the front rank of works of its kind as the last word on all matters pertaining to the preparation of remedies. The position that it occupies is due in large part to the careful, conscientious and learned chemist who has just relinquished his life's work.

Of the man we could say much, his work has already spoken for him. He has been a power in the pharmaceutical world not only by his great knowledge but by his personal efforts. He raised the standard of the pharmaceutical organizations throughout the country and established a feeling of confidence between the physician and the pharmacist which had not existed until the reliability of the *United States Pharmacopædia* came to be an accepted fact in both professions.

He was a man of versatile powers, a scholar and a scientist, one who always grasped the kernel of truth.

ECHOES AND NEWS.

NEW YORK.

Mount Sinai Hospital Cornerstone.—Gov. Odell, President Seth Low, Randolph Guggenheim, Edward Lauterbach, and Dr. A.

Jacobi will be the speakers at the laying of the cornerstone of the new Mount Sinai Hospital, at Fifth Avenue and One Hundredth Street, which will take place on May 22d.

Appointment of Dr. Fischer.—Dr. Louis Fischer has been appointed a Visiting Physician to the Willard Parker and Reception Hospitals.

Tuberculosis Congress.—The second annual meeting of the American Congress of Tuberculosis met this week at the Hotel Majestic. Delegates from the different States were present and many interesting papers were read. Dr. Clark Bell opened the Congress. Dr. Pryor of Buffalo said that 14,000 die of tuberculosis in this State every year, and 74 per cent. of these he believes might be saved if a correct diagnosis were made in the incipient stages and appropriate treatment instituted. The rich can go to sanatoria but the poor must die unless the State makes some provision for them. This New York State was about to do in the opening of the Adirondack Sanitarium.

PHILADELPHIA.

University of Pennsylvania.—Dr. Thomas R. Neilson has been elected Clinical Assistant Professor of Genito-urinary Diseases. Dr. Neilson has been at different periods Assistant Demonstrator of Anatomy and of Surgery at the university and also Professor of Genito-urinary Surgery in the Philadelphia Polyclinic.

New Pest House at Marcus Hook.—An emergency house capable of accommodating 500 patients has been completed at the State Quarantine Station at Marcus Hook. A new crematory has also been added to the equipment of the station. This station is said to be the second oldest in the world, having been begun in 1746.

Jefferson Commencement.—The Seventy-seventh Annual Commencement of the Jefferson Medical College was held in the Academy of Music May 15. A class of 142 was graduated. The address to the graduates was delivered by Professor W. W. Keen.

Lessons of a Decade in Hydrotherapy.—An address on the above subject was delivered at the County Medical Society May 8, by Dr. Simon Baruch of New York. Dr. Baruch said that the medical profession had been backward in adopting the use of cold water because of the erroneous idea that it produced shock. On the contrary, it produces the opposite effect when judiciously used. Water is used only for the purpose of conveying temperature. The desired effect of the use of cold water is the enhancement of the resisting powers of the individual. If a typhoid patient's teeth chatter while he is in the bath, the bath should be stopped. If he only shivers continue the bath, and increase friction. In treating insomnia by the use of hydrotherapy, warm water dilates the vessels and thus produces the desired ef-

fect. But if the patient gets out into the cooler air this effect is counteracted and the patient is wakened. To avoid this effect the patient should be wrapped in a warm sheet and blankets and then placed between warm sheets with hot water bottles surrounding him. The effect of the bath is kept up and sleep comes.

The Diuretic Effect of Water.—Dr. Baruch said it was a mistake to believe that the diuretic effect of water was due to the flushing of the kidneys and for that reason giving large quantities of liquids. Cold water acts in the stomach as it does upon the skin, causing a contraction and then a dilatation of the vessels. This stimulates the nerves, respiration, and the systole of the heart. These things bring about diuresis. Hence the giving of one or two ounces of water every 2 hours at a temperature of 40° F., will produce more diuresis than will a half-pint given less often.

One Hundred and Fiftieth Anniversary of the Pennsylvania Hospital.—The commemorative exercises celebrating the one hundred and fiftieth anniversary of the founding of "The Mother of American Hospitals" were held in the new Assembly Room of the hospital May 11. Benjamin H. Shoemaker, President of the Board of Managers, presided and after a short address of welcome introduced the orator of the day, John B. Garrett, one of the managers. The audience included many of the physicians of Philadelphia and numerous representatives of foreign medical and scientific societies. Mr. Garrett's address was almost wholly historical in character and traced the development of this beneficent institution from its inception to its present greatness. Benjamin Franklin is generally credited with being the founder of the hospital but disclaims that honor in his autobiography. However, he was largely responsible for the furthering of the plans of Dr. Thomas Bond in regard to the institution. The petition to the Assembly for help contained neither Franklin's nor Bond's signature but was in the handwriting of the former. That document contained a plea for the insane which was far beyond the spirit of the times and recognized lunacy as a disease forty years before it was so recognized in England or France. The wisdom of the charter granted is shown by the fact that it has never needed changing except to widen the limits of the property. May 11, 1751, the act incorporating the "Contributors to the Pennsylvania Hospital" was signed by Governor Hamilton. In August a temporary hospital was secured. In 1754 part of the present site was secured and in 1767 the balance of the 4.3 acres was added. The corner-stone of the present building was laid in 1755 and the patients removed from the temporary quarters the following year. Nov. 26, 1766, Dr. Thomas Bond gave the first clinical lecture in the hospital, this marking the beginning of systematic medical teaching on this continent.

The establishment of a separate department for the insane marked an epoch in the history of the hospital. A partial separation of the insane from other patients had been attempted in 1825 but the lack of quarters hindered the movement. A tract of 101 acres of land in West Philadelphia was secured in 1835, buildings erected, and in 1841 the insane patients were removed to the new quarters. These have been enlarged, the sexes placed in separate buildings and grounds, gymnasiums, and natatoriums, etc., erected since. This part of the hospital now has accommodations for 270 female and 250 male patients and during its 60 years' existence has cost upward of eight millions of dollars. The hospital proper has been extended and remodeled until it is now one of the most complete institutions of its kind in the world. The medical and surgical wards are in separate buildings, there are two nurses' houses, the dispensary is in a detached building across the street, a mechanical and chemical water filter of 250,000 gallons daily capacity is in use, a garbage incinerator has been erected, a laboratory of clinical medicine erected and endowed, and various other improvements made. All this has been done without State or municipal aid for over a century. The Pennsylvania Hospital is an institution of which Philadelphia is justly proud because of its history, its freedom from political influence, and the character of its work.

Woman's Medical College.—At the Forty-ninth Annual Commencement held May 16, a class of 37 was graduated. The address to the graduates was delivered by Dr. Elizabeth R. Bundy, adjunct Professor of Anatomy. Dr. Talcott Williams also gave an address.

CHICAGO.

Appointment of Dr. Webster.—Dr. George W. Webster has been appointed as member of the State Board of Health to succeed Dr. M. Meyerowitz, who has resigned.

Hospital for Employees.—A hospital for employees and for the residents of the vicinity is to be constructed at a cost of \$50,000 at Judd Street and Twelfth Place by the Crane Company.

Watering and Sprinkling of Streets.—The economy of water for public uses is said to be peculiar to Chicago. With the most abundant supply of any large city, upward of 190 gallons daily for every man, woman and child, against an average of 118 for other large American cities and less than 40 for European cities, there are no fountains to wash and cool the air nor running streams in the gutters to catch the dust from street and sidewalk. According to the Health Department, it is little wonder that catarrh is universal and dust diseases more prevalent in Chicago than elsewhere. The proposition to flush the streets into the sewers after they have been swept, says the Health

Department, should be carried into effect forthwith as a sanitary measure of the first importance.

Opening of New Hospital.—The formal opening of the Hospital of the Chicago Eye, Ear, Nose and Throat College, the first institution of its kind in Chicago, took place May 11th. The hospital is situated at the College, 206 Washington St., and occupies one floor. One notable feature is the establishment of a number of free beds where patients are received and attended by a corps of physicians and nurses free of charge.

Decoration for Dr. Fenger.—Dr. Christian Fenger has just received the Cross of Dannebrog from King Christian IX. of Denmark, in recognition of his contribution to surgical knowledge. The decoration consists of a gold and enamel cross, with four royal golden crowns set between the arms. On its face it bears the inscription "God and the King."

Report of Special Committee on Investigation of Cook County Hospital.—Appointment of a new warden and many radical changes in the management of the Cook County Hospital are recommended in the report of the special investigating committee. The recommendation for the removal of Warden Graham was a surprise to those who had followed the investigation. No serious charges are made against his management, but in view of the political influence shown to be back of his appointment the members of the committee decided that another man, pledged to stamp out partisan politics and personal favoritism, should be selected by the county board. Another important recommendation provides for the selection of a medical director. It is declared further that permanent improvement in the condition at the hospital is not possible without thorough reorganization of the entire working force. These conclusions are generally favored by the members of the county board, and except for Graham's removal, which may meet with opposition, the suggestions of the committee are certain to be acted upon.

In discussing the work of the internes, the manner of their selection and their duties, the committee finds nothing to suggest. The medical staff, however, comes in for mild criticism because of the lack of system prevailing. It is recommended that attending physicians visit the hospital every day. The appointment of a medical director is desired, not to superintend the actual treatment of cases, but to see that the complicated machinery of the staff organization is working effectively. To facilitate the work of the medical staff the committee suggests that a medical board consisting of the director and one representative from each of the three schools of medicine be selected by the staff. Such a central authority over the entire staff, it is believed, would improve the service.

GENERAL.

American Medical Editors' Association.—The annual business meeting of the American Medical Editors' Association will convene in the library rooms of the Ramsey County Medical Society, Lowry Arcade building, St. Paul, at 2.30 P. M., Monday, June 3d. The Lowry Arcade building is situated in St. Peter street, between Fourth and Fifth.

Dr. Javal's Blindness.—At a recent meeting of the Académie de Médecine in Paris, M. Javal, the oculist, who was operated on a year ago for glaucoma and is now totally blind, presented an apparatus of his own invention to facilitate writing by the blind.

Dr. Matthews to Go to Chicago.—Dr. Harper announces that Dr. A. P. Matthews, the instructor in physiological chemistry of the Harvard Medical School, has accepted a place on the faculty of the Medical School of the University of Chicago.

Damages for Death at Telephone.—The Supreme Court of Vermont recently held that a telephone company was responsible for damages in the case of a physician who was killed by lightning while sitting in his library reading under a telephone instrument owned by the company.

Lepers' Home in Louisiana.—The citizens of Jefferson and St. Charles parishes for seven miles around the Gustine plantation, just bought for the Lepers' Home, met in mass meeting last week and adopted resolutions asking that the Lepers' Home be not established in a thickly settled neighborhood. The meeting was presided over by State Senator Brady.

Trolley Ambulances Planned.—It is reported that the Brooklyn Rapid Transit Company will provide a receiving dormitory, with cots, medicines and the best medical attendants, for the immediate aid of persons injured on the lines of the company. The plan is to fit up an unused building at Fifty-second street and First avenue, on the same lines as the ordinary emergency hospital and also to follow the idea adopted by the New York Central Railroad at Buffalo. Everything that pertains to a well-equipped hospital will be placed in the building and an ambulance service by trolley will be provided.

Overcrowding in the Profession.—Statistics of the country relating to physicians indicate the possibility, if not the actuality, of overcrowding in the medical profession. It was found in the census year that there was one registered physician to every 655 people in the United States. That the number is in excess of the need is evidenced by a comparison with Germany, where, in 1898, there was only one physician to each 2,114 inhabitants, or relatively about one-third as many as in the United States. The doctors are more plentiful proportionately in some States than in others.

Thus, in California there was one physician to each 416 inhabitants, and in North Carolina one for each 1,189 of population. Even in states geographically connected and similar as to conditions there is wide disparity in the relative number of doctors. Thus, Michigan had one doctor to each 570 people, but in Wisconsin there were 936 inhabitants to each doctor, and in Minnesota one doctor to 1,004 people. Massachusetts has proportionately more doctors than are to be found in Connecticut and Rhode Island. The proportion in New Hampshire and Maine is much the same as it is in the Bay State, but Vermont finds employment relatively for a considerably larger number of medical men.

Mississippi Valley Medical Association.—It is announced that the dates of the next meeting of the Mississippi Valley Medical Association have been changed from the 10th, 11th, and 12th of September to the 12th, 13th, and 14th of September. This change has been made necessary because the dates first selected conflicted with another large Association meeting at the same place. The meeting is to be held at the Hotel Victory, Put-in-Bay Island, Lake Erie, O., and the low rate of one cent a mile for the round trip will be in effect for the meeting. Tickets will be on sale as late as September 12th, good returning without extension until September 15th. By depositing tickets with the Joint Agent at Cleveland and paying 50 cts. the date can be extended until October 8th. This gives members an opportunity of visiting the Pan-American Exposition at Buffalo, to which very low rates by rail and water will be in effect from Cleveland. Full information as to rates can be obtained by addressing the Secretary, Dr. Henry E. Tuley, No. 111 West Kentucky Street, Louisville, Ky. Members of the profession are cordially invited to attend this meeting. Those desiring to read papers should notify the Secretary at an early date.

Opium in Vermont.—Dr. A. P. Grinnell of Burlington, according to the *Evening Post*, has been making investigations as to the use of narcotics in Vermont, and is astounded at the facts disclosed. His statement seems almost incredible that "in the regular drug-stores and in 160 of the 172 general stores in the State of Vermont there is sold every month 3,300,000 doses of opium besides what is dispensed in patent medicines, and besides what the doctors dispense, which gives one and one-half doses of opium to every man and woman in the State above the age of twenty-one years every day of the year. By a dose one-grain opium, one-eighth grain morphine, one-half ounce paregoric, and twenty drops laudanum is meant. The amount consumed each month means a half dose for every man, woman, and child in the State every day of the year." The facts on which this statement is based were conservatively considered, Dr. Grinnell says. Where

information was refused he made no estimates, and the showing of consumption would be even larger if all the sales could be tabulated. No explanation of this undue use of narcotics is offered by the Doctor, but it is ascribed by others in large part to the difficulty of obtaining intoxicants in towns where the prohibition law is enforced.

Bitters and Prohibition.—"Bitters," under which name many intoxicating compounds are sold by druggists in prohibition States, come under the ban of the law in Maine, according to a recent decision by Judge Cornish of Lewiston. The decision is broad enough, too, to shut out many well-known and approved specifics. It was made in a case arising from a seizure in Lewiston of medicine consigned to a physician. The testimony showed that wine was the predominating element in the compound; that it contained 23 per cent. of alcohol; that the wine retained its character as an intoxicating liquor, capable of use as an intoxicating beverage, notwithstanding other ingredients had been mixed therewith. On this showing the Judge endorsed the seizure of the compound. Many proprietary medicines in the market contain a larger proportion of alcohol than the one seized in Lewiston, and if the decision of Judge Cornish is upheld the shipment of any of these medicines into Maine will be in defiance of the law and at the risk of the sender.

Obituary.—Dr. E. Stanley Perkins, a well-known physician of Germantown, Pa., died May 6. Dr. Perkins served in the navy during the Civil War and was for several years demonstrator of anatomy in the Medico-Chirurgical College in Philadelphia.—Dr. Robert Bolling of Philadelphia died May 12, aged 68 years. He was for many years associated with the late Dr. D. Hayes Agnew as demonstrator of anatomy in the latter's private institution.—Dr. Andrew K. Minnick died May 11, of cancer of the throat. He served in the German army during the Franco-Prussian War and was for some time connected with the Jefferson Medical College of Philadelphia.

Dr. Norman Arnett Smith died at his residence in Greenwich, Conn., on Sunday night of paralysis, aged seventy-eight years. Dr. Smith was a native of Worcester, Mass.

Dr. James Hayes, one of the oldest physicians in Central New Jersey, died Monday at his home, in Plainfield. The cause of his death was cancer. Dr. Hayes was the son of Dr. Samuel Hayes, who was one of the first physicians to practice in Newark. Dr. James Hayes was the oldest graduate of Princeton University, having received his diploma in 1841. In 1854 he graduated from the College of Physicians and Surgeons in New York, and after a short residence in Brooklyn moved to Plainfield. He leaves a daughter and a son.

Dr. Charles Rice, one of the leading pharmaceutical chemists of the country, and for twenty-

ty years chemist of the New York Charities Department, died in Bellevue Hospital May 11th from asthma, at the age of sixty-five years. He had been ill for the past year. Dr. Rice was connected with the Charities Department in various ways for thirty-five years. He was a pharmacist on board a Union war vessel during the war. As a careful student of pharmaceutical science his influence was strong in raising the standards of the pharmaceutical profession. As Chairman of the Revision Committee of the *U. S. Pharmacopœia* he moulded the policy of that standard work. In addition Dr. Rice had an international reputation not only as a chemist, but as a Sanskrit scholar.

CORRESPONDENCE.

THE KARNICE.

To the Editor of the MEDICAL NEWS:

DEAR SIR: "The Karnice" is the name of an apparatus destined to bring help to persons buried alive.

It is the invention of the Russian Count Michel de Karnice Karnichi, who was impelled to his researches by being witness to the narrow escape of a young lady who was thought to be dead and was about to be buried.

The apparatus consists of an iron tube, 10 centimeters in diameter, one end of which is screwed to the circumference of an opening made in the lid of the coffin, while the other end is connected with a small quadrangular metal box containing signals. This box is the only part visible over the grave; the tube is buried in the ground.

Through the whole length of the tube passes a metal rod which enters the coffin below and is connected with the signals above. At the lower end it has a metal ball which is placed 4 or 5 centimeters above the chest of the supposed dead. Whether this ball be pushed or pulled, it causes a sliding movement in the mechanism contained in the box, in consequence of which the box opens, a metal ball is displayed above it and a loud bell is made to ring for a considerable length of time.

The person enclosed in the coffin receives immediately all air necessary for comfortable breathing. A lamp throws light down to him, and the tube serves as a powerful speaking trumpet to make his voice audible at a great distance.

All joints being hermetically closed, no emanation of gases due to decomposition can escape.

When the tube is removed a thick metal plate lined with rubber and moved by a strong spring closes the opening in the coffin.

The box cannot be opened from without. The construction of the apparatus is of the

simplest. There is no complicated machinery to get out of order, nor is that unreliable factor, electricity, used at all.

HENRY J. GARRIGUES.

107 East 66 Street, New York.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, May 4th, 1901.

THE FORTHCOMING TUBERCULOSIS CONGRESS—DIFFICULTIES SMOOTHED AWAY—PLENTIFUL INFLOW OF MONEY—FAIR PROMISE OF A SUCCESSFUL MEETING—THE GREAT OFFICERS OF THE CONGRESS: PERSONAL SKETCHES—PROGRAMME OF WORK.

THE affairs of the International Congress on Tuberculosis to be held here in July next, which at one time were in a somewhat critical condition, have lately taken a favorable turn. The Congress will now bask in the light of the royal countenance; the King's patronage has been secured and the proceedings will be formally opened by His Royal Highness the Duke of Connaught, as representing his august brother. The number of adhesions so far is about 700, not including foreign delegates and members who, it is estimated, will make the total up to at least 1,500. This is the more gratifying that it was not unlikely that our Continental neighbours would hold aloof. At the Congress held in Naples in 1900 England was not officially represented at all, and in fact there were only two or three casual Britons present. This was due to the blundering of the Italians who have many admirable qualities but showed little capacity for organization and no idea of businesslike methods or practical management at this occasion. But the absence of the English speaking element—for America was not much better represented than Great Britain—had a bad effect, and led to an attempt being made to ignore us by the formation of a kind of Triple Alliance between Germany, France and Italy for combined warfare against the common scourge. An "International Committee" was formed for the purpose which did not include representatives of any other countries than the three named above. The chief duty of this international committee was to be the organization of Tuberculosis Congresses, but no reference was made to the plan which had been announced some time before of holding a Congress in London. In what relation the forthcoming Congress here is to be regarded as standing to the one held at Naples it would be difficult to say; but it is certain that the "International Committee" has had nothing to do with its organisation.

There appears to be every prospect of a successful meeting. The promoters of the London Congress are naturally highly gratified by the support they are promised from your side of the Atlantic, and Germany has also responded with something like enthusiasm, for the Committee

there formed in furtherance of the objects of the Congress includes the names of the Duke of Ratibor, a very important magnate, who was President of the Tuberculosis Congress held in Berlin, and several of the leading luminaries of medical science in the Fatherland. The great Koch has graciously consented to take part in the show. There was, it is understood, some difficulty in securing him. He expressly stipulated that he should be "on" (as the music hall artistes say) on the first day, and he further insisted on receiving assurances that the second wife whom, as all the world knows, he took unto himself some years ago, should be taken to the bosom of the British matron. An address will also be delivered by Professor Brouardel, the retiring Dean of the Paris Medical Faculty, who is one of the leaders of the campaign against tuberculosis in France. So far nothing has been heard of any star of corresponding magnitude from Italy, but there will doubtless be the usual crowd of delegates of various countries, clad in the swallowtail of ceremony and glittering with orders and decorations.

The financial aspect of the arrangements for the Congress caused a good deal of anxiety to the Organizing Committee at one time, but money is now coming in plenteously notwithstanding the abnormal drain there is on John Bull's purse at present owing to the increasing exactions of the Chancellor of the Exchequer and the large demands of all sorts of charitable organizations for the relief of the manifold miseries caused by the war in South Africa. Already the funds subscribed amount to some 20,000 dollars, and the inflow steadily continues.

The Congress is to be held in the Queen's Hall, close to the Langham Hotel where Americans most did congregate before the appearance of the huge caravanseries which have lately sprung up like fungi in the neighborhood of Charing Cross. The proceedings open on Monday, July 22d, and close on Friday, July 26th. Among the great officers of the Congress those best known to the American medical public are probably Sir William Broadbent, Chairman of the Organizing Council; Professor Clifford Allbutt, Chairman of the General Purposes Committee; Sir James Crichton-Browne, Chairman of the Reception Committee, and Mr. Malcolm Morris, the Honorary Secretary General. Sir William Broadbent is reputed to make the largest professional income among the physicians of this country. It may be well to explain that the term "physician" with us is not used, as I believe it is in America, as a generic name for practitioners of the art of healing; by English use it is restricted to those who limit their sphere of practice to internal medicine. A physician by the very nature of their practice cannot make so much money as a surgeon who has his hands full of work; the former has to sit at the receipt of custom a whole forenoon to earn \$150 to \$200, while the latter by two or three operations performed before the physician begins his work, may pocket from

\$1,000 to \$1,500. The physician's only chance of earning large fees is by journeys to distant parts of the country, the charge for which is at the rate of two-thirds of a guinea (about \$3.50) a mile. Sir William Broadbent spends a considerable portion of his working life in the train, and in this way he makes from fifty to sixty thousand dollars a year. He is a sound physician who, without giving scandal to his brethren by any of those subtle forms of advertising in which many professional Pharisees indulge themselves, has made himself well known to the public. He stands high in favour with royalty, and what is more to the purpose from a financial point of view, he has the power of making himself specially acceptable to rich Hebrews. Yet in one respect Sir William Broadbent is a disappointed man. He nourished the very natural ambition to be the titular and official head of his profession by becoming President of the Royal College of Physicians, but he failed on two occasions to secure the suffrages of the Fellows of the College who choose their President in much the same manner that the College of Cardinals elects a Pope. It is supposed that his failure was due to his connection with the National Association for the Prevention of Consumption, a body which is the motor power of the forthcoming Congress. This Association has from its first beginnings been a stone of stumbling to a sect of the College which thinks that any co-operation with the public in the prevention of disease would necessarily be fatal to its dignity. Though it was obvious that any campaign against tuberculosis, if it was to be successful, must be a people's war, the College would not take the initiative in starting it lest some infection from the *profanum vulgus* should come between the wind and its nobility. Sir William Broadbent in a more philanthropic spirit put himself at the head of the movement, and for this he was punished by the prim academic pundits who have a pretty large voice in the councils of the College.

Dr. Clifford Allbutt is Regius Professor of Physic in the University of Cambridge, and besides being a first rate clinician is a man of wide general culture. His contributions to the great "System of Medicine" which bears his name are marked by a literary grace too rare in medical writers. He is a scholarly physician of the old type now all but extinct, with the fullest equipment of modern science. For character as well as knowledge he stands among the highest in the little group of men who may be taken as truly representative of British medicine. He is one of those personalities whose name of itself places a stamp of respectability on any movement or institution with which it is associated.

Sir James Crichton-Browne was originally what is somewhat ambiguously called in this country a "mad doctor," and he is now a Lord Chancellor's Visitor in Lunacy, an official position which gives him a good deal of importance among those who have to administer our laws relating to the care of the insane. He is an able

man and his co-operation is much valued by the pioneers of movements and the propagators of hygienic ideas on account of his effectiveness as a public speaker. That is a quality much rarer among us than among the citizens of your great Republic, and the gift is proportionately valued. His copious eloquence on any given subject was the secret of Gladstone's power over the mass of his countrymen; and the same in an infinitely lesser degree may be said of Sir James Crichton-Browne.

Mr. Malcolm Morris is well known as a dermatologist and also as the editor of *The Practitioner*, a periodical which was crumbling into decay when five or six years ago he breathed life into the dry bones. To that periodical belongs the credit of the initiation of the campaign against tuberculosis in this country, and its editor has been a leading spirit in the National Association for the Prevention of Consumption, since its foundation. He is to visit America almost immediately after the Congress in order to deliver the Lane Lectures at San Francisco.

The work of the Congress will be distributed among four Sections: (1) State and Municipal; (2) Medical including Climatology and Sanatoria; (3) Pathology including Bacteriology and (4) Veterinary (Tuberculosis in Animals). The first Section is to be presided over by Sir Herbert Maxwell, a Member of Parliament, who though not a physician, is a prominent sanitarian and a charming writer on many subjects. It is to discuss such subjects as the geographical distribution of phthisis in England and Wales; the incidence of phthisis mortality in particular occupations; the statistical evidence against the heredity of phthisis; the statistical study of phthisis in relation to soil; the notification of tuberculosis; the influence of housing and aggregation; the control of milk and meat supplies and the provision of sanatoria. Among those who have promised to take part in the work of this section are Dr. Hermann M. Biggs, of New York; Henri Monod, Directeur de l'Assistance et de l'Hygiène publiques de France, and Dr. A. J. Martin, Inspecteur-Général de la Salubrité de l'Habitation de la Ville de Paris, Membre du Comité consultatif d'hygiène Publique de France; Professor Sheridan Delépine, of Manchester; Dr. Tatton of the General Register Office, Somerset House; Dr. Whitelegge, His Majesty's Chief Inspector of Factories, and a number of medical officers of Health.

The Medical Section of the Congress has for its President Sir Richard Douglass Powell, one of the physicians who ministered to Queen Victoria on her deathbed. He was believed to be opposed to the movement and even delivered a vehement harangue against it some two years ago at the Sanitary Congress held at Southampton. He has since seen the wisdom of moving with the flowing tide. A discussion on Climatology in relation to Phthisis will be opened by Dr. C. Theodore Williams and Dr. Burney Yeo, both of whom are recognised here as authorities on chest

complaints. Another discussion will be on "The Therapeutic and Diagnostic Value of Tuberculin in Human Tuberculosis." In this Koch is expected to take part. Professor Clifford Allbutt will open a discussion on Sanatoria for Consumptives. The sections of Pathology and Bacteriology will be presided over by Professor G. Sims Woodhead, of Cambridge, one of the best and at the same time most modest of pathologists. The subjects on the programme are "The Morphological and Physiological Variations of the Bacillus Tuberculosis, and its Relations (a) To other 'acid-fast' bacilli, (b) To the ray fungus and other streptothrixes; The Varieties of Tuberculosis (Morbid Anatomy and Histology); Mixed Infections in Tuberculosis; and the Tissue-changes and constitutional effects produced by the various constituents of Tuberculin." A discussion on this last subject is to be opened by Koch. Dr. Roux and Professor Metchnikoff, of the Pasteur Institute, Paris, are expected to take part in the proceedings.

The Veterinary Section the President of which is Sir George Brown, C.B., one of our leading authorities on the diseases of animals, will debate such questions as "The Diagnosis of Tuberculosis in Animals During Life"; "Tuberculosis and the Milk Supply" and "Legislative and other Measures necessary to combat Tuberculosis amongst Animals." This last discussion will be opened by Professor McEachran, F.R.C.V.S., D.V.S., Chief Veterinary Inspector to the Canadian Government.

In connection with the Congress there is to be a Museum illustrating the pathology, treatment, or prevention of tuberculosis. It will consist of two sections (1) Pathological and bacteriological preparations and specimens illustrating tuberculosis in man and animals. (2) Plans and models of hospitals and sanatoria, charts, and documents bearing upon the historical, geographical, and statistical aspects of the subject.

TRANSACTIONS OF FOREIGN SOCIETIES.

BRITISH.

PATHOLOGY OF DROPSY—SUPRAHEPATIC ABSCESS.

E. H. STARLING, at the Pathological Society of London, April 2, 1901, read a paper on the subject of the pathology of dropsy. At the outset he said that he had been able to carry his experiments forward only on healthy normal animals. He had consequently not been able to supply that most exacting test, namely, the observation of the phenomena under the conditions of disease. Dropsy he thought might be defined as an abnormal collection of fluid in the subcutaneous tissues and in the serous cavities of the body due to a disturbance of the balance between fluid-production and fluid-absorption in these same parts of the physiological economy. His experiments and conclusions are based solely on what may be termed *mechanical dropsy*. Many various factors are at work determining dropsy,

which may be classed under two categories; first, such as cause increased transudation, and, second, such as cause decreased absorption of the fluid. Ordinarily the factor of decreased absorption is entirely negligible when compared with the increased transudation and he is led to believe that such is the ruling relation in most cases. The elements at work in lymph-production are chemical and physical. The purely chemical elements may be regarded as diffusion, against which the vessel-walls offer no bar, as there is constantly an interchange through these walls of the fluid without, with that within the capillaries. Whenever increased diffusion occurs it may be postulated that large molecules have for some reason become small and hence more rapidly and completely dialyzable. Under such hypothesis one may account for any local edema as in the inflammatory conditions, but one cannot account for the extensive obstinate or permanent dropsies met with in practice. The physical basis of the increased diffusion rests, first, upon augmented presence of the blood within the capillaries, and, second, upon an increment in the permeability of the vessel-walls. As to this permeability, it is to be borne in mind that in the viscera it is in virtue of their functions greatest, whereas in the extremities it is least. In his experiments, unfortunately, the extremities were the field of observation and always in the presence of this unfavorable factor. Mechanical obstruction to the circulating blood will not produce dropsy whether present in the veins or in the capillaries. It was found necessary to reduce the nutrition of the walls either by the injection of some poison, like tissue fibrinogen, or by the initiation of hydremia. Only after such depreciation of the capillary-wall-nutrition could edema be produced. This was certainly true as regards the dropsy of mechanical pressure by tumor. Cardiac dropsy was slightly different. He had not been able to see why in cardiac disease there should be a rise of blood-pressure, and for the purpose of so demonstrating he employed Cohnheim's device of injecting oil into the pericardium and found that in simple cardiac failure there is a fall of pressure in the capillaries. The factor at work here therefore appeared again to be alterations in the condition of the capillary walls which rendered them more permeable to the blood. An example of this is the fact that in ischemia under conditions of normal blood-pressure there is very marked transudation into the tissues. With regard to the serous cavities, much the same problems were encountered. Simple increase in the blood-pressure would not cause a pleuritic effusion, but so soon as the vessels were damaged or the pleura injured, the effusion promptly took place. In the peritoneal cavity probably the blood-pressure changes were a more potent factor.

W. EWART spoke of the purely clinical aspects of the question and held that there is a nervous factor at work in these cases of effusion and par-

ticularly of localized edema, as found associated with local abscess and gout. Here the vasomotor changes were manifest at once in the redness. In the localized edema of paralyzed limbs there is also probably a nervous factor. Passing now to the more generalized edemas, especially that due to nephritis, his method of treatment by acupuncture and feeding had led him to suppose that here the brain stimulated by the toxicity of the blood took the place of the local nervous influence acting in the circumscribed dropsies. At any rate relief of the edema by drainage and suitable feeding always stimulated diuresis. He thought this could best be explained by the hypothesis he had outlined.

MR. DANIEL, at the Harveian Society of London, March 21, 1901, showed a man who had the following history of a suprahepatic abscess treated by the transpleural method. He had had remittent fever and dysentery with mucoid stools and tenesmus, but without blood, in 1896 when in China as a naval signal man. Since then he had had three attacks of what was called gastritis and the condition was treated as such. At one time a swelling appeared in the right side which was diagnosed as abscess of the liver, but apparently after six weeks of treatment it disappeared. He left the Navy in 1896 and all these attacks had occurred in England between 1897 and 1900. In 1897 he contracted syphilis. The fourth and last attack of the gastro-enteric troubles began in January, 1900, with pain at the base of the right chest, which was not affected by food. The patient was flatulent, anemic and constipated. The liver was not enlarged or palpable and the spleen was in the same condition. He had no definite physical signs but abscess of the liver was suspected. March 16th after a course of treatment for dyspepsia, it was noted that increased pain in the epigastric region had appeared and a month later in April there was deficiency of movement of the right side of the chest and a small amount of pus was suspected. The liver was still not palpable. Three weeks later it was found on admission to fill the epigastric region, part of the right lumbar and almost reached the umbilicus. It was soft, slightly elastic, but presented no definite edge. The patient was much deprecitated, pale, sallow, with a temperature of 100.4° F. and great mental depression. The mass showed no fluctuation and was dull all over and caused dulness up to the fourth rib on each side in front and up to within an inch of the angle of the scapula behind. The breath sounds were deficient over the right base. The apex beat was displaced upward and outward considerably. He had epigastric pain and tenderness which were most marked when he lay on his back. He slept well, but perspired freely at times. He also had distinct pain at the tip of the right shoulder, and a slight leucocytosis. Aspiration in the eighth space of the scapular line yielded much chocolate-like reddish-brown fluid which contained tissue-debris and actually disintegrating cells and yielded a pure culture of the

bacillus coli communis. Operation was performed. Free drainage was the outcome and very rapid, full recovery followed. The heart returned to its normal position and every feature pointed to complete cure. *Amebae* were found in the walls of the abscess. Eleven months after the operation, the patient feels very much better and says he never felt so well in his life. The right lung has also expanded completely.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held at Baltimore, Md., May 7, 8, and 9, 1901.

SECOND DAY—MAY 8TH.

(Concluded from Page 757.)

In response to a most cordial invitation from the Faculty of the Johns Hopkins Medical School the Association convened for this morning's session in its amphitheatre. The Value of bedside Work in the teaching of medicine was the theme chosen by Dr. Osler. In laying special stress upon this, he pointed out that unless a lecturer is specially gifted he becomes not alone a bore but a positive hindrance to the student. Before the moralist can suggest any remedies for existing evils he must have a firm grasp on what is right and what is wrong; ere the medical student can outline a mode of treatment for the sick he must have an equal grasp of the normal, healthy state.

The Cystoscope.—Dr. Kelly next demonstrated his cystoscope catheterizing a patient's ureters as he talked. In connection with some of the difficulties others had had in this work, he said that attention to the little details is absolutely essential to success. The position of the patient; knee chest; the position of the arms and of the face; in fat women, the emptiness of the stomach; the ballooning of the vagina with air; these, and a number of other factors he classified as having special import. In every case of pyuria one should determine the precise source of the pus as early as possible. Occasionally a simple cystitis will not clear up because of a small area of ulceration—this can be seen with the cystoscope, and, if necessary, excised—as he had recently had occasion to do. Too many people who are treated for colitis have a simple proctitis and with the proctoscope this can easily be diagnosed and treated.

Use of the Cystoscope in the Male.—Dr. Young next showed how to reach the male kidneys with as much facility as Dr. Kelley the female. Under purely local anesthesia and in a few moments over three minutes, he painlessly passed double catheters on a patient whom he had never before seen. He made use of Caspar's new and exquisitely finished instru-

ment by which one is able to pass the second catheter without removing the instrument. In the hands of an expert this causes no abrasion of the mucous membrane and consequently blood does not obscure the view.

Relation of Medicine to Pathology.—Dr. Welch then spoke of the relation of medicine to pathology, and gave, in some detail, the essence of the laboratory teaching at the Johns Hopkins. He feels that too much time cannot be spent at the experiment desk for what the student wins in this way becomes a life-long possession. But this laboratory work is in its very essence a study of minutiae and fundamental general principles must be jealously safeguarded against the inroads of uncorrelated details. To this end he urges that the laboratory work be diligently supplemented by recitation, by lecture and by reading. He felt that the Johns Hopkins was to be very greatly congratulated on the close relationship which existed between the laboratory and the wards. Every student either rents or owns a microscope—his desk for the whole four years is his castle, is his home.

Artificial Fractures.—The section then adjourned to the anatomical demonstration room where Dr. Oscar H. Allis, of Philadelphia, gave a most interesting demonstration of his apparatus for creating fractures and dislocations. This actual observation of the production of the fracture and seeing the broken or dislocated bone subsequently cut out Dr. Allis considers an invaluable aid in the development of surgical sense. By direct downward pressure of the femur upon the fixed pelvis he produced a most beautiful stellate fracture of the acetabulum. This lesion is scarcely recognizable during life. The patient is told he is all right, there is no break only a sprain, and yet disability may exist for months.

Touching their wonderful immunity to fracture which is enjoyed he showed very graphically the extraordinary elasticity of the long bones. In a half dozen consecutive trials the femur sprang fully an inch from its normal line before it fractured. It is known how rare fracture of the neck is in vigorous adults. Dr. Allis demonstrated that direct pressure of half a ton applied between the head of the femur and the condyles failed to fracture at all, increased pressure broke the bone at the shaft's center.

Pancreatitis, with Special Reference to Chronic Pancreatitis.—Mr. A. W. Mayo-Robson of Leeds, England, in a few graceful words thanked the Association for the honor it had heaped upon him. Plunging deep into his topic, at once, he expressed both surprise and pleasure that so much had recently been written on pancreatitis and pancreatic surgery. But, much as may of late have been gained, there is still a very great shroud enveloping the disease and even with our most recent applications of pathological and physio-

logical chemistry, and in the light of a free and open incision, we are often sadly in the dark as to diagnosis. Ten years ago marked the birth of this last child of surgery. Up to that time the chronic form of pancreatitis was always confounded with cholecystic inflammations, while the acute invariably passed unchallenged in the dark depths of the abdomen. Inflammatory changes which have long been recognized in the bile ducts have their counterpart in every detail in the pancreatic ducts—sometimes jaundice is present, at other times not. It seems strange that while choledochotomy has been done these ten years, we are only just beginning to appreciate that what obstructs the common bile duct also often blocks the outlet of the pancreas.

Etiology of Pancreatitis.—In speaking further of this feature he drew attention to the minute anatomy of the gland. Unlike the parotid it has but little supporting tissue, hence although deeply placed, the slightest trauma may give serious sequelæ—indeed, the gland is probably very often injured in gall-stone operations. Simple and infective pancreatitis exists, just as in the liver corresponding forms of hepatitis are found.

Symptoms of Pancreatitis.—These are as yet but vaguely distinguished from affections of the gall bladder; indeed, when complicated with jaundice one cannot differentiate these conditions. It is, however, generally agreed that an extensive and rapid loss of weight is very significant, particularly in the presence of clay-colored stools. Glycosuria is a tolerably constant symptom, but it appears too late to be of any diagnostic value. Fat necrosis is to be expected, although it is found only after operation; and, since it occurs in other conditions, is not pathognomonic. Lipuria has been cited as an aid in diagnosis, but recent researches show that but little of the accumulating fat passes by means of the urine. As a rule, then, germ infection through the duct, or by contiguity, is the most probable etiological factor, while a sudden loss of weight, with or without jaundice and accompanied by white stools is the most constant symptom. That the pathology of fat necrosis has a very important bearing on the treatment, particularly of the hemorrhagic form will be seen by the history of its degeneration. The fat splits into a glycerine and fatty acid, these unite with the calcium salts of the blood, thus reducing its power of coagulation. Calcium in some form is indicated in heroic doses. The glycerine one would expect to develop an aldehyde, but this is not the case. If the urine in a case of pancreatitis be tested with phenyl-hydrazine singularly arranged yellow crystals appear very constantly. Mr. Mayo-Robson does not yet know their composition, but he suggests that they may be a by-product of the glycerine and finds them of great use in making a differential diagnosis between ordinary inflammatory jaundice and

icterus complicating pancreatitis. One very interesting question in connection with this fat necrosis is, if it be the direct result of a blocking of the duct, and absence of the secretion, why is fat deposited in regions so distant from the pancreas, as for example in the myo—and pericardia? Hemorrhage, probably the direct result of the reduction of the calcium of the blood, may supervene at any moment, and cause death very suddenly. It often coexists with cancer. May occur far distant from the seat of operation and gives no prognostic signs of its advent.

Treatment.—The drug treatment consists in the administration of chloride of calcium gr. xxx. three times daily for two days prior to operation and the same amount by enema for two days after. If hemorrhage should begin after operating, it can be controlled and the patient saved by heroic doses of this drug.

Hemorrhagic Pancreatitis.—Much has been said and written about this condition. It is a term suitable only for certain conditions, some of which are as follows: (1) In cerebral disease there is a general tendency to pancreatic hemorrhage; (2) bleeding may occur with, or without jaundice; (3) acute and chronic forms of pancreatitis may occur without hemorrhage. Accordingly we would classify pancreatitis as the acute, subacute and chronic—the hemorrhagic form being only a type of the acute. The treatment of the acute form calls for immediate operation just as urgently as acute appendicitis. Mr. Mayo-Robson usually operates through an anterior incision for this and for the subacute form with a counter incision for drainage through the left costo-vertebral angle. Chronic interstitial pancreatitis often simulates malignant disease, and explains those cases of extraordinary recovery where carcinoma had been diagnosed, ninety per cent. of the chronic cases recover after drainage is indirectly established via the gall-bladder.

Dr. George E. Brewer of New York in discussion said that he would deal not so much with the clinical side of pancreatitis but with the surgical anatomy and embryology of the organ. Early in the fifth week of fetal life two buds develop from the middle region of the alimentary canal. One projects upward to become the liver, the other downward to develop into the pancreas. By a process of division and subdivision this bud which projects back into the posterior mesentery gives rise to the two pancreatic ducts, the lower series of buds yielding the canal of Wirsing; the upper, that of Santorini. It has always been held that this latter is closed in 90 per cent. of all cases, but he has found, rather, that it is *open* in 90 per cent. of all cases. From an etiological standpoint this discovery is of paramount importance for it shows the continuous path which exists from pancreas to gall-bladder when the lower common duct is blocked. There are three

chief variations in the duodeno-cystic opening: (1) They may be double; (2) duct of Santorini may open into the common bile duct; (3) there may be three separate openings. Dr. Brewer then turned his attention to the second special point in his discussion—the direction in which pus from the pancreas most frequently gravitates. Embryology again points out this path and demonstrates why it is so invariable. The history begins with the rotation of the stomach, which forms the lesser peritoneum, and casts three layers of fibrous tissue to the rear abdominal wall. These, being functionless, fuse and ultimately merge into areolar tissue. Thus the pancreas becomes a retro-peritoneal organ and its areolo-adipose tissue becomes directly continuous with the fatty capsule of the left kidney. Among the minor points considered, Dr. Brewer asked whether the hemorrhage of the acute form of pancreatitis may not arise from a sort of auto-digestive action of the pent-up secretions. A final point in the anatomy of this region consisted in a reminder that the papillary opening of the joined ducts has in many cases been found to be abnormally large. Paralysis of the sphincter favors ascending infection by *bacillus coli communis* and he feels that certain forms of pancreatitis may be explained in the same manner as ascending pyelonephritis. In closing he urged the great necessity of loin counter incision for drainage.

Dr. E. L. Opie of Baltimore said that the common bile duct receives the pancreatic duct just prior to its entry into the duodenum. For a short and variable distance the two run in company and separated only by a diaphanous membrane. The cloaco-duodenal orifice is much narrower than the opening of either duct consequently it is the most common lodging point for stones. It can readily be seen that there will be all the difference in the world in the effects of a large and a small stone. The large one closes all three openings, the small stone passing well beyond the opening of the ducts closes only the cloaco-duodenal opening. This last condition was found in a Johns Hopkins case; there was a direct, unobstructed path from liver to pancreas. That bile may be a very important factor etiologically is substantiated by the fact that subacute pancreatitis and death followed the injection of bile into the pancreatic duct in five dogs, consecutively.

Dr. J. W. Elliot of Boston thinks that jaundice is a very common symptom of pancreatitis and believes that gall-stones are its most frequent cause. He cited several cases in which cystic drainage effected cures.

Dr. Geo. R. Fowler of New York cited three important cases. The first had fearful pain; on operation, fat necrosis was marked; there was much thin dark fluid about the pancreas; drainage; death; autopsy confirmed the diagnosis. The second presented to a very marked and alarming degree three distinct attacks of extreme depression. They simulated the profoundest

shock. After recovery from the third attack and under strychnine the patient rallied enough for operation. Recovery ensued after prolonged drainage. In the third case only was jaundice present, it had existed for over two years—this man had the characteristic collapses but recovered after drainage.

Dr. H. L. Carson of St. Louis cited a case of chronic pancreatitis in a young woman where the symptoms were so disguised that it was only after two years and several operations that she finally recovered after marsupialization of the gall-bladder.

Dr. W. L. Estes of Easton, Pa., recalled a case which had been operated upon for cholelithiasis. The head of the pancreas had been found to be so enormously enlarged that it was diagnosed as carcinomatous. Nevertheless the patient continues well. Another case was of traumatic origin, followed a slight blow on the abdomen. In this instance the only sign was a tremendous loss in weight from 160 lbs. to 95 lbs. After five weeks a great tumor developed which contained 2,500 c.c. of pancreatic fluid and which discharged copiously during recovery.

Mr. Mayo-Robson in closing said that gall-stones are the great causative factor of chronic pancreatitis although they may have been passed long prior to the operation. Dr. Fowler's series of collapses was of peculiar interest; did he feel that they rallied because of the strychnine? From Dr. Opie's discussion he had learned the very important rôle which may be played by the bile, but is this bile ever sterile? Dr. Brewer's demonstration of the frequent patency of Santorini's duct explains those obscure cases where a stone has blocked the lower common bile duct.

Treatment of Chronic Ulcer of the Stomach.—A. W. Mayo-Robson said that the technic and the daring originality of the modern surgeon has made ulcer in a measure a surgical disease. Of the 25 per cent. which fail to respond to medical treatment in from four to five weeks almost every one should undergo operation. It is from these cases that we reap the appalling death rate which it is safe to put above 30 per cent. There are now quite enough statistics to show that by operation this rate can be reduced to 5 per cent. After enumerating the well known operations for the relief of ulcer Mr. Mayo-Robson said that prolonged preparations directed toward the sterilization of the gastric mucous membrane were quite unnecessary. It is predisposed to be aseptic, aseptic foodstuffs and occasional lavage two days prior to operation suffice. Gastro-enterostomy will doubtless be the operation of choice for many years, because of its low mortality. It secures drainage and rest, it relieves hypochlorhydria, it is curative. He prefers the posterior operation which can easily be done in a quarter of an hour by the use of his bone bobbins. Pyloroplasty, in the absence of adhesions and in the presence of a properly placed ulcer deserves great considera-

tion. In conclusion Mr. Mayo-Robson demonstrated on cleverly prepared models the use of the bone bobbin and certainly, in his hands they seem well-nigh ideal.

Dr. J. W. Mayo, of Rochester, Minn., spoke entirely on gastro-enterostomy. He prefers the anterior operation, stating that in 63 cases he had had but 1 per cent. of mortality.

Dr. T. A. McGraw of Detroit said that the only possible objection to his method of making anastomosis by means of an elastic ligature, is that it takes from 60 to 70 hours for the ligature to cut through. In gastro-enterostomy this delay is of no consequence. It is the cleanest, safest and quickest method.

Dr. W. G. McDonald of Albany reported two cases in which he thought a more radical operation than gastro-enterostomy would have prevented the development of carcinomata which, within two years proved fatal. The ideal operation is extirpation.

Dr. W. L. Rodman of Philadelphia felt that excision is always indicated in those ulcers which are located anteriorly. Unfortunately they are in the minority.

Mr. Mayo-Robson in closing the discussion thanked the Association for the many courtesies which had culminated in his presenting these papers in America.

Pulmonary Insufflation for the Prevention of Surgical Pneumothorax with Demonstration of New Apparatus for Artificial Respiration.—Dr. R. Matas of New Orleans directed attention to the great importance of intralaryngeal insufflation in place of any variety of face mask. In these there is great danger of filling the stomach rather than the lungs. In discussing the Fel-O'Dwyer apparatus, he pointed out that it failed in two important details; it lacks a manometer, which shall automatically regulate the pressure employed, and a self-acting cut-off to govern the amount of air used.

THIRD DAY—MAY 9TH.

Resection of the Chest Wall for a Large Sarcoma; Successful Use of the Antistreptococcal Serum.—Dr. W. W. Keen of Philadelphia gave the details of this operation in full and in conclusion laid stress on the following points: (1) the method of separating the tumor from the chest wall; (2) the anterior and posterior division of the ribs prior to opening the plural cavity diminishes the danger of collapse of the lung; (3) Fel's apparatus with mouth-piece is unsatisfactory—he prefers the Matas-Bloom device; (4) the suture of the lung to the chest wall was followed by no untoward result and it distinctly diminished post-operative shock; (5) blood examination was of the very greatest value in that it demonstrated a free streptococcus septicemia, and yielded a very clear indication for the administration of antistreptococcal serum.

Venous Aneurism of the Right Subclavian

Artery and Vein.—R. Matas of New Orleans spoke of the history of this operation; of some of the grave difficulties attending it and of the more important details of his technic. In all but 15 cases are recorded, but only 4 of these fall in the domain of modern surgery. In all probability it is better not to operate on traumatic aneurisms of the subclavian. The gravest difficulty arises from hemorrhage which Rivington's loop in this case entirely failed to control. The more important technical points were first the use of massive infiltration anesthesia which enabled two hours' work to be done without the need of chloroform, and second, successful lateral phleborrhaphy of the anastomotic outlet.

Dr. A. D. Bevan of Chicago discussed the following questions: (1) Proximal and distal ligation of the artery without tying the vein; (2) hemorrhage from the vertebræ is usual; (3) prognosis in unoperated cases is surprisingly good; (4) gelatine injections may help.

Dr. T. A. McGraw stated that the type of aneurism was the deciding factor as regards amputation. The traumatic aneurisms are stationary; the atheromatous progressive.

The Following Papers Were Read by Title.
—Subtrochanteric Osteotomy by Dr. E. H. Bradford of Boston; Operative Indications in Tumors of the Liver with a Report of Cases by W. G. McDonald of Albany; Congenital Sacrococcygeal Tumor of Large Size by Chas. A. Powers of Denver; Vicious Circle after Gastro-Enterostomy by T. A. McGraw of Detroit; A Case of Splenectomy for Myelogenous Leukemia by M. H. Richardson of Boston; Congenital Anterior Dislocation of the Tibia Treated by Arthrotomy by J. B. Roberts of Philadelphia.

Phlebitis Following Abdominal Operations.—Dr. A. Vander Veer of Albany in speaking of the etiology of this condition expressed surprise that in view of the trauma to which the abdominal veins are exposed during operation it is so uncommon. With no hand to guide or limit its advent or its progress it is always unexpected. None can say of these dread changes whether they are pandemics like grippe, or atmospheric conditions, or gaseous influences. Whether the omnipresent germ or too tight post operative abdominal bandaging have any bearing, it is impossible to say. Immediately after moving into the new Albany Hospital he had four cases in every one of which the primary wound healed by first intention. Since the disease is more frequently seen on the left side the possibility suggests itself that, as in varicocele, the distribution of the left abdominal veins may be a factor worthy of consideration.

Dr. Geo. R. Fowler said that the importance of this lesion varies with the frequency of its occurrence, with its mortality rate, with the duration of resulting disability. In a study of 3,000 of his more recent cases he found that .59 per cent. developed phlebitis. Two were double; ten followed septic appendectomies. He considers

the more important clinical signs to be as follows: (1) onset never before 10 days to 3 weeks after operation; (2) dull pain over the femoral vein and above Poupart's ligament; (3) rarely begins with a chill; (4) there is often an increased pulse rate with no corresponding rise of temperature; (5) one can palpate the rope-like veins; (6) edema is not marked if the patient stays in bed; it develops on standing. The prognosis for life is good; disability usually exists for from three months to a year. The treatment is as near absolute rest as is possible and counter-irritation. He uncompromisingly condemns the excision of the vein in which ultimately, without exception, the function is completely restored.

Dr. W. J. Mayo cited twelve cases. Three of these had a complication from which the cases of the previous speaker had been free—pulmonary embolism. One died chiefly because of his too strong heart; the pulse of the others became almost imperceptible—this factor no doubt saved their lives. In one-half of his cases the lesion was on the right side.

Operation For the Radical Cure of Umbilical Hernia.—Dr. W. J. Mayo of Rochester in detailing this operation which he has successfully used in 19 cases, said that it seemed particularly indicated in cases where the recti had degenerated to mere fibrous ribbons. He overlaps the fasciae and frequently closes the wound at right angles to the mid-line. It gives a sense of firmness equaled by no other technic.

Dr. De Forest Willard of Philadelphia cited a case where the patient weighed 300 lbs.; he had successfully operated through eight inches of fat.

Umbilical Hernia.—Dr. J. C. Warren of Boston, in reference to the etiology of umbilical hernia spoke of the diffuse lipomatous fold almost always present in these persons which, in the upright position tugs incessantly at the umbilical cicatrix. He suggested the removal of this layer as a post operative prophylaxis.

Dr. Mayo, in closing, said that he always removed as much omentum as continuously extruded from the wound.

Prevention and Cure of Post Operative Hernia.—Dr. James E. Moore of Minneapolis said that with the modern technic and care in closing abdominal wounds the occurrence of a hernia following operation was something of a disgrace to the surgeon. He said that practically no one in the Northwest now uses any other than absorbable suture material. As to the indications for operation, he feels that it is much easier to give the contra-indications which can now be counted on the fingers of a single hand.

Dr. A. D. Bevan of Chicago cordially endorsed all that had been said in favor of absorbable sutures and favored formaldehyde catgut, which is both strong and sterile. In regard to the position of incisions for abdominal work he felt there was too much disregard to the injury of nerves and blood vessels. As determined by the position of these, there exist certain very well defined nor-

mal incision lines—the abnormal lines should be used as little as possible. He mentioned a so-called auto-suture which was being used in Chicago in Bassini's operation. It is a narrow ribbon of tissue frayed from the aponeurosis of the transversalis by which the latter is sewed to Poupart's ligament.

Officers Elected.—At the executive session the following officers were chosen: President, De Forest Willard of Philadelphia; first vice-president, Robert Abbe of New York; second vice-president, R. Matas of New Orleans; treasurer, Geo. R. Fowler of Brooklyn; secretary, Dudley P. Allen of Cleveland; recorder, Richard H. Harte of Philadelphia. The next meeting will be held at Albany, N. Y., about May 20, 1902.

Fractures and Dislocations of the Spine.—Dr. S. H. Weeks of Portland said that dislocation without fracture is unknown except in the lower cervical region. It is usually caused by hyperflexion, the upper part of the spine being almost invariably displaced forward. The so-called fracture-dislocations are found in all other parts of the spine. The treatment is in every case immediate and liberal laminectomy, to which there are practically no contra-indications in a pronounced case. Whether the dura should be opened or not is a problem not yet solved, though he feels there are very few contra-indications to opening it.

Dr. John C. Munro of Boston said that the outlook is always bad in these cases. It is the surgeon, not the neurologist, who should decide as to operation. He feels that the dura should always be opened and left open to avoid any possible pressure on the cord.

Dr. S. J. Mixter of Boston favors immediate operation even in the cervical region; he does not suture the dura.

Radical Cure of Inguinal and Femoral Hernia with a Report of 800 Cases.—Dr. W. B. Coley of New York spoke first of inguinal hernia in the male. He emphasized the desirability of absorbable sutures and in addition to other technical points stated that the use of rubber gloves had reduced his percentage of infections from four to less than one-half of one per cent. He has had excellent results in 150 cases of inguinal hernia in the female.

Dr. J. C. Warren of Boston feels that there is too great a tendency to operate on children. It must not be forgotten that trusses frequently cure these patients, even as late as the twenty-first year. He prefers silk to any other form of suture, feeling that it is so bland when buried in the tissues as virtually to be absorbable.

Dr. W. T. Halsted of Baltimore said that for the past two years he had discontinued transplanting the cord. The two most important points in his technic at present consist in the removal from the cord of all superfluous veins and in the use of buried silver wire. More than 500 herniotomies have been closed with silver wire; 25 have suppurred but the sutures had to be removed in two cases only. In 227 appendectomies

over 1,000 buried sutures have been used, of these only four had to be taken out.

Dr. Coley, in closing, said that he does not usually advise operation after 60. Silk is the least irritating of all non-absorbable sutures.

Pneumonotomy, with Exhibition of the Patient.—Dr. W. J. Hearn of Philadelphia exhibited a case of abscess of the lung which he had successfully drained in the axillary line. He is at a loss to know how to close the sinus since it communicates with a bronchus.

Silver Wire and Electricity in the Treatment of Aneurisms.—Dr. L. Freeman of Denver has had two cases, one of which is apparently cured, while in the other the aneurismal wall has at least doubled in thickness. Not feeling content that Hunter's experiments with the coiling of silver wire in glass bulbs really typified the conditions as they exist within an aneurism, and believing that soft silver wire is better than the drawn variety recommended by Hunter, he hollowed out a large turnip and experimented wiring this artificial aneurism. He concludes that the soft wire gives by all odds the better results, and feels that the best results can be obtained only by the use of over 200 feet in large thoracic tumors.

Dr. J. M. T. Finney, of Baltimore, cited eight cases which he had wired. In two there was apparent cure; in two death was hastened; in two the pain was temporarily relieved; in two the operation was too recent to report. The results may not be immediate. In general he does not look upon the operation with favor.

Dr. De Forest Willard cited a case in which much had been gained by the employment of this method. He employs a very moderate current: 10 to 20 mille-amperes.

Dr. R. Matas has studied the matter from the standpoint of abdominal aneurisms only. Some of his limitations and conclusions were as follows: (1.) the aneurism should be sacculated; (2.) it should be unilocular and its walls thin; (3.) atheroma contraindicates wiring; (4.) the lumen should be small. These facts, unfortunately, cannot be ascertained during life.

Movable Kidney; Its Cause and Treatment.—Dr. M. L. Harris of Chicago presented an admirable series of tabulated measurements of men, women and children by which he attempted to show that the kidney's position bears a certain definite relation to the body form. He divides the abdomen into three zones, the middle one of which lodges the kidneys. In cases of evident movable kidney the cubical contents of this zone is found to be very much below the normal. This suggests a new and more rational form of treatment, which consists in limiting the area of the lower zone rather than forcing the organ up into an area from which it has been expelled for lack of room.

Nephrolithotomy on Both Kidneys.—Dr. S. J. Mixter of Boston showed skiagraphs of a

case in which unusually large deposits had been found. He considered it very unusual that no degenerative changes had been induced by their presence; and that there had not been found the slightest trace of pus or blood in the urine.

New Method of Closing Defect Following Thorough Removal of Breast.—Dr. S. J. Mixter of Boston considers that the smaller the malignant mass the more extensive should be the operation. Feeling that one of the great factors which cause women to particularly dread the removal of a breast lies in the extensive disfigurement he now, by a series of liberating incisions slides the healthy breast over to the middle line, thus closing the entire wound by a single line of union.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held March 21, 1901.

The President, Robert F. Weir, M.D., in the Chair.

THE scientific business of the session consisted of a discussion on the modern treatment of gonorrhœa and its complications and sequelæ. The following papers were read:

"Acute Gonorrhœa," by G. K. Swinburne, M.D., "Chronic Gonorrhœa," by John Van der Poel, M.D., "The Complications of the Posterior Urethra," by J. Pedersen, M.D., "Gonorrhœal Conjunctivitis," by W. A. Holden, M.D., "Gonorrhœal Stricture of the Urethra," by J. R. Hayden, M.D.

All of these papers, by special arrangement, appear in this week's issue of the MEDICAL NEWS.

Treatment of Acute Gonorrhœa.—Dr. Robert W. Taylor said that on an occasion like this, when there is a battle royal over methods old and new, a veteran rejoices to be on the fighting line. The treatment of acute gonorrhœa constitutes the most important chapter in genito-urinary surgery. There is, unfortunately, in modern times an easily-noticeable tendency to extreme measures in the treatment of gonorrhœa. This is not reflected as much as one might expect in the papers read to-night. The general tendency seems to be toward a conservative eclecticism, though, of course, as might have been anticipated from younger men, there is a good deal of talk of the usefulness of the new silver salts.

Some Old Ideas.—With regard to the treatment of gonorrhœa he said he has some very emphatic ideas. Years ago the armamentarium of the physician for the treatment of "clap" consisted of the use of antibleorrhœic internal remedies and the injection of an astringent solution. We have advanced beyond that and perhaps should forget a good many of the things that were recommended rather confidently at that time, but we must not forget too much. It is the custom for the

physician of the present day to turn up his nose at the old-fashioned "clap" injection and the use of antibleorrhagic internally. There is no doubt in his mind, however, that in four or five years most of the medical profession will go back to these remedies in a conservatively eclectic way.

Abortive Treatment of Gonorrhea.—Dr. Taylor has never been very much impressed with the abortive treatments for gonorrhea so often highly recommended. In a large practice, extending over many years, he has perhaps seen eleven cases, not more, in which he thought that an acute gonorrhea had been aborted by treatment. For some time we have been passing through what may be called the permanganate stage of the treatment of gonorrhea. Just as many ardent advocates as the permanganate treatment has now, the bichloride treatment had fifteen or twenty years ago. It is scarcely necessary to say that the bichloride treatment is no longer in active use.

Irrigation Treatment.—Contrary to the opinion of many genito-urinary surgeons, he is inclined to think that most of the flushing out of the urethra, especially during the acute stage of gonorrhea, is injurious. The passage of a stream of water under pressure (and the occurrence of some pressure is absolutely unavoidable) is always a source of irritation. The bulging out of the urethra under the pressure of the injected fluid causes injury of the delicate cells of the urethra, separates them from one another, irritates them and gives rise to a certain amount of inflammatory reaction.

Selected Treatment.—For the treatment of an ordinary attack of acute gonorrhea, all sources of irritation should be avoided as much as possible. The penis should be soaked freely and often in hot water, should be washed frequently in boric acid and boric acid and the alkalies should be used internally. The patient should be put at rest and the bowels should be kept loose. After the third day, the penis should be wrapped in warm lead-water and laudanum, in order to relieve pain and burning. A little later in the course of the disease, weak permanganate injections should be given, but not in large quantities, nor too frequently. With the subsidence of the discharge, antibleorrhagics will be found to do good. They will usually be indicated from the tenth to the fourteenth day, when the alkalies should be stopped. The internal medication must be kept up for some time.

Silver Salts.—The reason why we hear so much about the new silver salts is that the younger men do not realize how to use nitrate of silver properly. They have used it in too strong solutions and have naturally obtained an inflammatory reaction. There is no doubt that the silver salts are very effective bactericides for the gonococcus. Hence the popularity of the new silver salts which do not irritate. We may obtain the good effects of the nitrate

of silver without any bad results by using a solution of 1-32,000 or up to 1-20,000. One to two ounces of such a solution should be used at a time. If the discharge becomes slightly more copious and then lessens in amount, but without inflammatory reaction, the strength of the solution of silver nitrate may be increased to 1-10,000 and even to 1-5,000. At the end of six to seven weeks instillations of nitrate of silver in the strength of 1-500 may be given. This will be the ideal treatment of gonorrhea in the future.

Various Astringents.—We hear a good deal said of the longevity of the gonococcus in our day, but we must remember that long ago Ricord said it is easy to know when a gonorrhea begins, but very hard to tell when it will end. Meantime we must not forget that some of the astringent solutions suggested by Ricord, as, for instance, the chloride of zinc solution may still prove of good service, especially toward the end of a case of gonorrhea when the discharge is but slight and other symptoms have practically ceased. A solution of sugar of lead may also prove of service. Not every case of gonorrhea will yield to the same astringent even toward the end of its course. It may be necessary to try several in succession. Under these circumstances a dilute solution of sulphate of copper will sometimes be found useful.

Pathological Basis of Gonorrhea.—Dr. Lapowski said that when we consider the underlying reason of the discharge in gonorrhea we can understand much better the reason why the disease often proves obstinate to treatment. Within twenty-four hours after the discharge is first established the gonococci have found their way into the glands of the urethra. When solutions of protargol are first injected they fail to reach the gonococci concealed in these glands. There are cases of gonorrhea in which the gonococci remain on the surface of the mucous membrane. These can be cured immediately. These cases help to furnish the examples in which the abortive treatment of gonorrhea has been successful. Gonorrhea of the conjunctiva can be completely eradicated. There, of course, we can secure absolute physical and physiological rest for the inflamed mucous membrane. Urination and erection, with the consequent hyperemia, make it impossible to obtain absolute rest for the urethral mucous membrane and so inflammations of it become inveterate. Dr. Lapowski has seen a case in which injections of protargol had been used faithfully for four months, yet gonococci were demonstrable in the secretion.

Complications of Gonorrhea.—The gonococcus is now known to invade nearly every large organ. It has been found on every serious membrane on the body—in the articular cavities, in the endocardium and pericardium, in the peritoneum, and on the meninges. It has been known to produce endosynovitis and

other seromembranous inflammations. The gonococci have been demonstrated in the blood some seven times and have been found on lesions of the heart valves and serous linings in a very large number of cases. It has been found in the spleen and in pure culture in intramuscular abscess and has been known to produce erythema nodosum of the skin.

Gonorrhea and Marriage.—There are some authorities who say that the existence of a purulent discharge in which gonococci can not be demonstrated does not contra-indicate marriage. Other authorities are not of this opinion. The microscopic diagnosis of gonorrhea is not final. There are certain involution forms of the gonococcus which do not take Gram's stain. Wasserman has shown in a recent case that these involution forms occurred on the endocardium and pericardium when ordinary forms of gonococcus were found elsewhere in the system. Only one thing remains to be said with regard to gonorrhea. Prophylaxis is the best method of preventing the ravages which the disease produces upon the human race, and the limitation of reproduction which it brings about. There is no method of treatment that can be trusted with any degree of confidence and in general we know too little about the types of the disease and the reasons for its chronicity for us to say anything very definite about its treatment as yet.

Gonorrhreal Auto-Infection.—Dr. Ramon Guiteras said that occasionally fresh discharge is set up in patients who have not been exposed to infection and whose wives are above suspicion. It is evident in these cases that the cause of the disease is a self-infection from old lesions existing in the posterior urethra. These conditions are often spoken of as "strains." They are really rekindling of old foci of disease and the spread of the infectious agents over previously healthy parts. In many of these cases, Dr. Guiteras has found a seminal vesiculitis and this was evidently the source of the new infection.

Gonorrhreal Treatment.—The question of treating gonorrhea is, of course, a very difficult one and may be approached from many sides. Dr. Guiteras has seen numbers of patients cured by copaiba and sandal wood when they did not care to take injections. In some cases patients have gone to homeopathic physicians and taken little pellets and yet been cured. There is no doubt that the astringent remedies, zinc, and lead and alum, will continue to be used. Of the newer silver remedies, argol, argonin and protargol, the last seems to be the best. Protargol has given better satisfaction than mercurol. Solutions of silver salt seem to have a specific bactericidal effect for the gonococcus.

Irrigation Treatment.—Irrigations of permanganate of potash have certainly been of very great service in the treatment of gonorrhea. The special precautions to be taken are

that the hydrostatic pressure must not be high, and no shock must be given to the compressor muscle. The effort to pass the muscle should be made two or three times at intervals, rather than continuously for any length of time. There seems no doubt that fewer strictures have occurred since the use of permanganate irrigation has become more general. Since the introduction of this method of treatment, however, more seminal vesiculitis has been noticed. This is perhaps due to the fact that our methods of diagnosis have improved and cases of seminal vesiculitis now seldom fail of recognition.

Individual Not Routine Treatment.—Dr. Charles H. Chetwood said that there is too much routine in the treatment of gonorrhea. There are two general methods—the anti-phlogistic treatment, which institutes mild measures at the beginning until the acute stage of the disease has passed; and the other, which wages direct war upon the gonorrhea and which may be called the antiseptic method. This latter curtails the length of the disease and lessens complications. It is not its purpose to destroy all the gonococci at one application. The gonococci lying on the surface of the tissues are destroyed and the urethra is made more uninhabitable for the microbes. Irrigations are not for the acute stage of the disease, as they add to the inflammatory reaction by irritation. At first only the anterior urethra should be treated. After five or six days, irrigation of the whole of the urethra should be employed, on the principle that to stop the spread of a fire water should be thrown on a house which is close to the fire. By the antiseptic method of treatment, symptoms are rendered much less annoying. There is less ardor urinæ and chordee and the same lessening of symptoms is noted with regard to the posterior urethra.

Gonorrhreal Prophylaxis.—Dr. F. Bierhoff said that no mention had been made of a prophylactic treatment of gonorrhea. This is of two kinds, general and personal. The first requires supervision of the sources of infection, that is, control of the prostitute. Much good can undoubtedly be accomplished in this way, though, of course, the evil cannot be entirely eradicated. The regulation of prostitution should not be in the hands of the police, but of the sanitary authorities. This transfer of authority in these matters would surely result in better enforcement of the regulations. Dr. Frank of Berlin proved that it was possible to prevent the development of gonorrhea by the injection of a few drops of a twenty-per-cent. solution of protargol. Virulent gonorrhæic material was injected into the urethrae of six males. Three were left untreated and three were given preventive treatment. In none of the latter three did gonorrhea develop. In the others on the first sign of discharge the abortive treatment with protargol was employed.

and the disease was quickly cured. At Stockholm the experience has been that with a four-per-cent. solution of protargol the disease can be prevented if the solution is employed within ten hours after suspicious intercourse.

Picric Acid in Gonorrhea.—Dr. Hill said that picric acid, as suggested by Guyon in 1899, was a very efficient remedy in a certain stage of gonorrhea. After the frankly purulent discharge has ceased and a mucoid discharge supervened with threadlike fibers in the urine, picric acid is the most effective agent for the cure of the persistent low grade inflammatory condition that remains. The picric acid is used in a solution of 1-100 or 1-200 and about twenty to sixty minims should be introduced at one time.

What Is Gonorrhea?—Dr. F. C. Valentine of New York said that the trouble with the treatment of gonorrhea is that we do not know what gonorrhea is. Urethral discharges are not all of them identical in type even when caused by the gonococcus. There are several forms of gonococci and what we need more than special germicides is the knowledge of methods for the differentiation of the various forms of gonorrhea and the special treatment needed for each form. All cases cannot be treated in the same way; they must be treated individually. There is one thing that is needed in the treatment of all cases and that is exceeding gentleness. Any treatment that causes irritation and pain does more harm than good. Surgeon Woodruff announces that he has had good results in the army, in the treatment of acute gonorrhea, by the irrigation of the urethra for hours continuously with decinormal salt solution. This form of treatment, of course, can only be employed in the army. The use of cocaine has been suggested in order to make the urethra anesthetic for instrumentation and manipulation. Its use has been suggested as a preliminary to irrigation. Any one who has had much experience knows that the result of using cocaine is to cause more pain for a longer time afterward, and what the patient may lose in intensity of pain at the moment the instrumentation is employed is more than made up for by the length of time during which he must suffer afterward. The only anesthetic that a genito-urinary surgeon can employ successfully is that of exceeding gentleness. Experience and practice will soon teach that it is an adequate one.

BOOK REVIEWS.

THE FEEDING OF INFANTS, Home Guide for Modifying Milk. By JOSEPH E. WINTERS, M.D., Professor of the Diseases of Children, Cornell Medical College. E. P. Dutton & Company, New York.

THIS little book is a record of personal experience and the well-known success of the

author as a practitioner renders such a record one of value. It is designed as a guide for the home modification of milk. The method of formula is adopted, ten being devoted to the changes required during the first year. Each formula is accompanied by a percentage statement, for it is clear that the author thinks in percentages and takes each step with a very definite idea of what he wishes to accomplish. The one source of uncertainty is that encountered by every similar method of home modification—the errors which must result from the every-varying composition of different samples of milk. Every observer, however, must agree with the author's statement that children can get over slight chemical differences in cow's milk much more readily than they do physical differences—those due to contamination.

In studying the formulæ, one is struck by the fact that the percentages vary decidedly from those used by most writers. The fat and sugar are unusually high; the proteid low, particularly during the first months. Two per cent. of fat is given on the first day and four per cent. in the fourth week, a percentage reached by most authors by the end of the third month. Seven per cent. of sugar is given on the first day. Of proteids, one-fourth of one per cent. is given at the outset, one per cent. being reached in the fourth week and two per cent. in the fifth month.

The low percentage of proteids used during the early weeks is no doubt due in part to the unusually low percentage strength accepted by the author as that of average breast milk, namely, one per cent. The author is very positive in his statements regarding the readiness with which the average child digests these mixtures and, in view of his large experience and close observation, his statements must be considered of much value.

The section on milk equipment for home modification is particularly practical. The same is true of the chapter devoted to the various details of modification and to the importance of securing fresh and uncontaminated milk. The section on infant foods, although not long, is one of the best that has been written upon that subject. The author holds that, tested by the unerring standard of the infant's natural food, no infant food fulfills the conditions required of a substitute. He believes them open to criticism in two particulars—chemical composition, and the source from which they are derived. It is a fact of great importance that milk is purely an animal food, of animal origin; most of these foods are of vegetable origin, and Nature has not endowed infants with digestive power to deal with excess of vegetable products.

The book will prove a useful household guide to infant feeding and will be an effective aid to the practitioner in prescribing diet. The one drawback in the latter case will be the

necessity of always having the book at hand. Although not extended, the work is a valuable contribution to the much discussed subject of infant feeding, as it is a record of actual experience of a very practical man.

THOMAS SYDENHAM. By JOSEPH FRANK PAYNE, M. D., Oxon. Longmans, Green & Co., New York.

THIS latest volume of the "Masters of Medicine" series, is a veritable glimpse of English thought, customs, and history in the seventeenth century, with a scientific man for a hero. Dr. John Brown speaks of Sydenham as "the prince of practical physicians, whose character is as beautiful and as genuinely English as his name." As portrayed in the pages of this delightful biography Sydenham whose name has always been a synonym for common sense and wisdom in the midst of quackery and ignorance is shown to be a man with a profound and classic education which he applied to the affairs of the nation. Always ahead of his time, and shrewd with the keenness of long and accurate observation he made many guesses at the truths which have only been revealed in the last quarter of the century, and also formulated many theories that to-day are as quaint and droll as they were advanced two hundred and fifty years ago. Certain it is with plague and smallpox and cholera constantly at hand to study Sydenham's observations are interesting seen in this day, and the book of his life, serving as it does, as the foreshadowing of many lines of modern medicine, is a romance and a history in medical literature.

STUDIES IN THE PHYSIOLOGY OF SEX.—The Evolution of Modesty, The Phenomena of Sexual Periodicity, Auto-Erotism, by HAVELOCK ELLIS. F. A. Davis Company, Philadelphia and Chicago.

THE following passage from the preface of this book gives Dr. Ellis' point of view with regard to medical sexual matters very succinctly and completely. He says: "The omission of considerations of treatment or prevention (of pathological sexual conditions) at this stage is intentional. It may safely be said that in no other field of human activity is so vast an amount of strenuous, didactic morality founded on so slender a basis of fact. In most other departments of life we at least make a pretense of learning before we presume to teach. In the field of sex we content ourselves with the smallest and vaguest maximum of information, often ostentatiously second hand, usually unreliable. Before we can safely talk either of curing or preventing these manifestations we must know a great deal more than we know at present, regarding their distribution, etiology and symptomatology."

This passage strikes the keynote of the

book. The author gives the result of his careful study of certain sexual phenomena that escape general notice. Sexual periodicity, for instance, with a consideration of the annual sexual rhythm and the tendency of the sexual impulse to become heightened in spring and autumn shows how much human and animal nature is in sympathy with the lower physical world around them.

There is an interesting appendix on the influence of menstruation on the position of women. Mr. Ellis discusses the influence of the monthly flow with its usual neurotic accompaniments as constituting certain important elements in the emotional atmosphere through which men habitually view women. In a second appendix Dr. F. H. Perry-Coste discusses sexual periodicity in men. He has shown by work on the rhythm of the pulse that pulse reading arranged in lunar monthly periods and averaged over several years displays a clear and sometimes a very strongly marked and symmetrical character. It would seem, then, that man has a monthly physiological period as well as woman, and the suggestion is made that this is of sexual origin.

BOOKS RECEIVED.

The MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.

TUBERCULOSIS AS A DISEASE OF THE MASSES, AND HOW TO COMBAT IT. Prize Essay by Dr. S. A. Knopf. M. Firestack, 200 W. 96th St., New York.

SIXTEENTH ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY FOR THE YEAR 1899. Washington Printing Office.

TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION. Twenty-fourth Annual Meeting. 8vo, 232 pages. Chicago.

A TEXT-BOOK OF GYNECOLOGY. Edited by Dr. Charles A. L. Reed. 8vo, 900 pages. Illustrated. D. Appleton & Company, New York.

EXPERIMENTAL PSYCHOLOGY. A Manual of Laboratory Practice. By E. B. Titchener. Vol. I., Part II. Instructor's Manual. 8vo, 456 pages. Illustrated. The Macmillan Company, New York. \$2.50.

HUMAN PLACENTATION. By Dr. J. Clarence Webster. 8vo, 126 pages. Illustrated. W. T. Keener & Co., Chicago.

THE MEDICAL NEWS POCKET FORMULARY FOR 1901. By Dr. E. Quin Thornton. Lea Brothers & Co., Philadelphia and New York.

A SYSTEM OF PRACTICAL THERAPEUTICS. Edited by Dr. Hobart Amory Hare. Second Edition. 8vo, 841 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

PROGRESSIVE MEDICINE. Vol. I, 1901. March. Edited by Dr. HOBART AMORY HARE. Lea Brothers & Co., Philadelphia and New York. \$2.50.

A MANUAL OF PRACTICAL HYGIENE. For Students, Physicians and Medical Officers. By Dr. CHARLES HARRINGTON. 8vo, 729 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. \$4.25.

THE TREATMENT OF FRACTURES. By Dr. W. L. Estes. 8vo, 216 pages. Illustrated. International Journal of Surgery Co., New York.